AN INVESTIGATION INTO TEACHERS' PERSPECTIVES ON THE IMPLEMENTATION OF ENVIRONMENTAL CONCEPTS IN LIFE ORIENTATION IN GRADE 9: A WESTERN CAPE CASE STUDY

BY

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AT

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DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (unless to the extent explicitly otherwise stated), that production and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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ABSTRACT

This thesis investigated teacher's experiences of teaching the subject Life Orientation in terms of the Curriculum and Assessment Policy Statement (CAPS) Policy Document for South African schools. Teachers' perspectives on the implementation of environmental concepts in the Grade 9 section of schools were investigated to highlight their understanding of the required implementation of environmental concepts in LO, identify possibilities teachers envisage for implementing environmental concepts, and highlighting challenges and how teachers overcome them when teaching environmental concepts in LO.

The thesis was designed as a nested case study spread across three schools. The case study focused on the teachers' perspectives of the implementation of the environment related topics in the LO curriculum. Each school represented a smaller case nested within the bigger case study and the school environment, biographic information of the teachers, their teaching strategies and artefacts of resources formed part of the data produced in each case. Each case was analysed in terms of context profile of school, participants and their teaching qualifications and EE in LO practices. Empirical data was collected through semi-structured interviews, observation in the classroom, artefacts and analysis of the CAPS policy document.

The thesis found that teachers are facing challenges when implementing environmental concepts in LO in Grade 9. Challenges included a limited understanding of the construct environment, a basic teaching repertoire based on teacher-centred approaches, little support from school management and low status of the subject amongst staff and learners.

Recommendations were made to assist teachers to best teach environmental concepts in LO. These included better in-service training opportunities, better management support and the appointment of subject specialist teachers.

OPSOMMING

Hierdie tesis het onderwysers se ervarings ondersoek om die vak Lewensoriëntering te onderrig in terme van die Kurrikulum- en Assesseringsbeleidsverklaring (KABV) beleidsdokument vir Suid-Afrikaanse skole. Onderwysers se perspektiewe op die implementering van omgewingsbegrippe in die Graad 9-afdeling van skole is ondersoek om hul begrip te beklemtoon van die vereiste implementering van omgewingsbegrippe in die LO, identifiseer moontlikhede wat onderwysers beoog om omgewingsbegrippe te implementeer, en uitdagings te beklemtoon en hoe onderwysers uitdagings oorwin wanneer hulle omgewingsbegrippe in LO onderrig.

Die tesis is ontwerp as 'n geneste-gevallestudie wat oor drie skole versprei is. Die gevallestudie het gefokus op onderwysers se perspektiewe van implementering van die omgewingsverwante onderwerpe in die LO kurrikulum. Elke skool het 'n kleiner geval in die groter gevallestudie en die skoolomgewing verteenwoordig, biografiese inligting van die onderwysers, hul onderrigstrategieë en artefakte van hulpbronne het deel gevorm van die data wat in elke geval versamel is. Elke geval is ontleed in terme van konteks profiel van elke skool, deelnemers in die studie en hul onderrig kwalifikasies en EE in LO praktyke. Empiriese data is ingesamel deur semi-gestruktureerde onderhoude, observasie in die klaskamer, artefakte en ontleding van die KABV document.

Die studie het bevind dat onderwysers uitdagings in die gesig staar met die implementering van omgewingsbegrippe in die LO in Graad 9. Uitdagings sluit in ‘n beperkte begrip van die konstruk omgewing, 'n basiese onderrig repertoire gebaseer op onderwysergesentreerde benaderings, min ondersteuning van skoolbestuur en lae status van die vak onder personeel en leerders.

Aanbevelings is gemaak om onderwysers te help om sodoende omgewingsbegrippe ten beste te onderrig. Dit sluit beter indiensopleidingsgeleenthede, beter bestuursondersteuning en die aanstelling van vakspesialis onderwysers in.

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ACRONYMS AND ABBREVIATIONS

CAPS - Curriculum Assessment Policy Statement

CDC/HKEAA - Curriculum Development Council and Hong Kong Examination and Assessment Authority

DBE – Department of Basic Education

DESD - A Decade of Education for Sustainable Development

DoE- Department of Education

EC - Education Commission

EE - Environmental Education

EECI - The Environment Education Curriculum Initiative

EEPI - Environment Education Policy Initiative

EMB - Education and Manpower Bureau

GET – General Education and Training

FET - Further Education and Training

KABV - Kurrikulum- en Assesseringsbeleidsverklaring

LO - Life Orientation

NCS - National Curriculum Statement

NECC - National Education Crises Committee

NEEP-GET - National Environmental Education Project for General Education and Training

NEPI - National Education Policy Investigation

NETF - National Education Training Forum

NS - Natural Sciences

OBE - Outcomes-based Education

R-NCS - Revised National Curriculum Statement

SD – Sustainable Development

UNEP- United Nations Environmental Programme

UNESCO – United Nations Educational, Scientific and Cultural Organisation

WHO – World Health Organisation

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OUTLINE OF THESIS

1.1 INTRODUCTION

This chapter gives a brief outline of this thesis and consists of three parts. The first part of this chapter gives a motivation for, background to and presents reasons to why this thesis was done. The second part focuses specifically on the problem statement, aims and objectives of the thesis, research design and methodology, which includes the paradigm and sampling, data collection methods, data analysis and research ethics. The third part provides an overview of the thesis by way of a chapter outline.

1.2 HISTORY OF THE ENVIRONMENT

Ranked as the supreme law of South Africa (Act 108: 1996), the Constitution declares the following about the environment and the health of citizens of South Africa (SA Constitution Act 108, 1996: 11):

> *Everyone has the right: a) to an environment that is not harmful to their health or well-being; and b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –*
>
> *(i) prevent pollution and ecological degradation;*
>
> *(ii) promote conservation*
>
> *(iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.*

In the light of the above statement, I feel the current state of the environment is in contrast to this declaration. Globally and locally, we are facing issues related to the environment and these are important 21st century concerns. Edwards (2011: 1) describes the current state of our deteriorating environment as follows: "humanity sitting on the edge of a precipice faced with making decisions that will influence life on Earth". In addition to this, Reddy (2011) argues that the current state of affairs on Earth has been presented as an environmental crisis of global proportions that is threatening the very existence of humanity.

Biophysical (Nature and physical processes – see figure 2.1, chapter 2) issues of the environment according to Edwards (2011) and Gough (1997) include climate change and global warming resulting in drought, increasing contamination of land, air and water, continuing depletion of natural resources. Social issues of the environment include crime, poverty, gangsterism, growth in world population, economic issues such as unemployment and political issues such as corruption and its related consequences as noted by Edwards (2011) and Gough (1997). It is thus evident from the descriptions above that our environment is deteriorating due to continuous human activities.

I am concerned about the environmental crisis and see the need for a clean and safe environment that is essential for a healthier and longer living as stated in the Constitution of South Africa (Act 108: 1996). This statement outlined in the Constitution of South Africa is in agreement with the following goals for environmental education (EE) as presented in the Tbilisi Declaration (UNESCO, 1988: 6):

- to foster clear awareness of, and concern about economic, social, political and ecological interdependence in urban and rural areas;
- to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment;
- to create new patterns of behaviour of individuals, groups and society as a whole towards the environment.

The Tbilisi Conference was one of the first international conferences to make a clear link between education and environmental problems and principles generated at this conference are still central to the education project in environmental education.

1.3 MOTIVATION FOR THESIS

The underlying motivation for this study started with my love for the biophysical environment. The functioning of living organisms and how they are linked to one another in the biophysical environment has always fascinated me. During my early school years, the subject Biology captured my attention as it dealt with the biophysical aspects of the natural world and beyond. Another subject that was of

interest to me, was Geography, which included some social aspects of the environment. Ways in which the social and biophysical dimension of the environment linked with each other crossed my mind and I was interested in understanding the relation between humans and Nature and how all living organisms can live in harmony with one another within the environment.

Another motivation behind this thesis came when I was appointed to teach the subject Life Orientation (LO) [1]. Being a senior phase LO teacher for grade 9 learners at a high school, further motivated me to do this thesis as the subject LO links human activities to the broader environmental ideas and concepts (see chapter 2). Gous and Roberts (2015) argue that LO aims to educate the total human being in a holistic manner and this makes LO stand out among other subjects. In addition, (Swarts, Rens, and de Sousa: 2015) links LO to the "quality imperative of education as encapsulated by the Global Education for All Monitoring Report (2005: 17), which states that not only cognitive understanding, but also the promotion of values and attitudes/skills are central to responsible behaviour."

LO deals with the following aspects as presented by Gous and Roberts (2015: 64-5):

- LO as a subject was designed to deal specifically with the mind, heart, body and the concept of spirit.
- LO is grounded theoretically in the Bio-Psycho-Socio-Spiritual model of Winiarski (1997), who broadened the Bio-Psycho-Socio model of Engel (1980).
- Additional to its academic component, it also has an experiential component.

I therefore saw/see LO as a useful vehicle for developing environmental awareness among learners.

[1] LO as a subject is central to the holistic development of learners. It addresses skills, knowledge and values for the personal, social, intellectual, emotional and physical growth of learners, and is concerned with the way in which these facets are interrelated (DoE SA, 2011, 8).

1.4. HISTORY OF LIFE ORIENTATION

LO came into being when South Africa's first national curriculum was introduced, known as Curriculum 2005 (C2005) (Department of Education (DoE) (SA, 1997). Curriculum developers wanted to make sure that learners were prepared for the real life outside of school. LO was made a compulsory subject from grade 1 to grade 12 to provide learners with specific knowledge and learning skills as stated by Gous and Roberts (2015). The name LO was given to this new subject, as it replaced a number of subjects from curriculums prior to 1997, such as Vocational Guidance, Citizenship Education, Health Education, Sexuality Education, EE, Physical Training, Religious Education and Life-skills Education (Gous and Roberts: 2015). LO, therefore, intends to lay the foundation for learners' future and "equip them with the knowledge and skills to make informed decisions and choices and to take appropriate actions to live a meaningful and successful life" (DBE SA 2011: 9; Theron and Dalzell, 2006: 399).

In 2003, Curriculum 2005 presented many challenges to South Africa's education system and was replaced by the Revised National Curriculum Statements (DoE SA, 2003) and slight changes were made to LO as noted by Gous and Roberts (2015: 62). In a second and further review of the national curriculum, the Curriculum and Policy Statements (CAPS) came into being in 2011 as a refinement of the R-NCS (DBE SA, 2011a, 2011b). LO was the name for the subject in the General Education and Training (GET) (senior) phase which consists of grades 7, 8 and 9. LO covers 5 themes in the senior phase as stated in the LO CAPS curriculum document (DBE SA 2011). Gous and Roberts (2015) summarise these themes as follows:

1. *Development of the self in society*

   It focuses on the dimensions of the self and guides learners to be the best they can be and develop their personal skills.
2. *Health, environmental and social responsibility*

   It is a positive move towards life choices that improves learners' health, their communities and their environment.
3. *Constitutional rights and responsibilities*

   This theme prepares learners for their role as responsible citizens of South Africa.

4. *Physical education*
   It aims to teach learners the short and long-term health benefits of physical activity for the body.
5. *World of work*
   Assists learners with future career choices and provides them with sound knowledge of career opportunities.

The CAPS curriculum includes aims linked to the environment and environmental issues under the topics, 'development of the self in society' and 'health, environmental and social responsibility' (DBE SA: 2011). Health, environmental and social responsibility will be dealt with in detail as it includes important environmental concepts grade 9 learners should be aware of. How teachers deal with, mediate and facilitate these topics forms the basis of this thesis.

1.4.1 Health, Environmental and Social Responsibility

I decided to do a Master's degree that involved my motivational interests by combining EE implementation with LO (See chapter 2). This LO theme contains environmental linked aspects, that is; 'biophysical, social, economic as well as political dimensions', as presented by O'Donoghue (1995) (See figure 2.1, chapter 2). Hornberg (2002: 188) indicates that the inclusion of environmental realities in school subjects (such as LO) "serves as a helpful framework to narrow the gap between learning and action", especially around social and environmental issues that touch people's daily lives. Dewing (2010), Jickling and Wals (2008) acknowledged this view and argue that the integration of the environmental issues in classrooms creates a means for learners to investigate their own values, beliefs and routines. Learners can explore the above aspects in order for them to become informed about the environment and to maintain an ecological balance according to Jickling, Lotz-Sisitka, O'Donoghue and Ogbuigwe (2006: 1). The teaching of social and environmental responsibilities is therefore important and according to Ontong and Le Grange (2014, 9) this relates to the current precarious state of the environment and could help learners to understand the root causes of current unsustainable socio-environmental behaviours. This could encourage senior learners (grade 9) to act responsibly towards the environment and prepare learners to be "ready in accepting multiple solutions to single problems" (Christiaans, 2006: 34).

1.5 BACKGROUND TO THESIS

EE developed as a sub-field of education and as a response to environment and its related issues to either slow down or stop continuous environmental degradation. EE as a field developed internationally and became part of formal curricula in many countries. Its formal roots can be traced back to the1972 United Nations Conference on Human Environment when the "world's rich and poor nations came together for the first time to discuss matters of environmental concern in Stockholm" (Loubser, 2014: 45). EE is considered to be an important field in the current period of human development. This period is called the Anthropocene and focuses on human impact on the non-human world in a human-centred (Anthropocentric) society.

In South Africa, EE has been part of the formal curriculum since 1997 even though the first attempt to include it in the formal curriculum was in the 1989 White Paper on EE (Mosidi: 1997). The most recent school curriculum, the Curriculum Assessment Policy Statement (CAPS), includes EE as a learning requirement in various subjects. The CAPS policy document requires that all learning activities must have a contextual focus (DBE SA, 2011: 4), and this can be linked with environmental issues in EE curricula which is by their nature context-bound (Ferreira, 2013: 263).

Swarts et al. (2015: 101) states that scholars of EE and LO are in widespread agreement that responsible behaviour is an important feature of an individual's health and well-being. This relates to Rooth's study (2005: 121), which mentions the "importance of the psychological dimensions of EE which is parallel to LO because it plays an important role and has the capacity to focus on intrinsic motivation and the affective aspects of learners' behaviour."

In this thesis, I worked closely with LO teachers in grade 9 to gain an understanding of their perspectives around the implementation of environmental concepts as a learning requirement of the CAPS policy document. This study can provide information about and highlight challenges currently experienced by teachers when implementing environmental concepts in LO as a learning requirement of the CAPS policy document for Grade 9 in high schools.

1.5.1 The LO Teacher

LO teachers can play an important and leading role when teaching learners about the environment and issues related to the environment. Teachers have the capacity to cultivate positive attitudes and values in learners when teaching learners important environmental concepts through the topic environmental and social responsibility and Wagiet (2001: 73) confirms that EE can "strengthen a sustainability ethic in learners and raise their cognitive awareness level."

Grade 9 LO teachers are thus responsible for helping the senior phase child in his/her "adolescent stage – identity versus role confusion" (Woolfolk, 2013, 88) to develop a sense of competence and achievement towards nature and to open them to positive environmental responses. Swarts et al. (2015) further suggest that teachers should be stimulated to deliver enriched, critical and productive knowledge, values and skills that will contribute to generating young and active citizens. However, Swarts et al. (2015: 99-100) contend that the delivery of environmental knowledge and skills by LO teachers within the classroom setting may not be so straightforward. The statement of the problem revolves around the implementation of environmental concepts within LO as a subject of the CAPS LO policy document.

1.6 PROBLEM STATEMENT

1.6.1 Environmental Education Implementation in Various Subjects

This thesis was undertaken because the implementation of EE in various subjects and formal curricula in general has been demonstrated to present problems to teachers as indicated by Walker (1997); Lee (2000); Swarts et al. (2015) and Gous and Roberts (2015). Walker's (1997) research in Australia for example, suggested that the requirements for implementing socially critical EE particularly in terms of taking action on environmental problems, were simply too great for many teachers to take on board. Reddy (2000: 29) also indicated that EE implementation in subjects suggested that teachers are "keen to promote positive attitudes towards the environment in their teaching, but are limited in their delivery of such aims by various constraints." These studies have identified challenges on implementing EE in schools and includes a lack of time, a lack of knowledge, lack of resources, lack of school support and lack of staff expertise and motivation as noted by Ballantyne (1999); Lee (2000); Gous and Roberts (2015) and Swarts et al. (2015). These challenges, however, could have

implications when implementing EE in various subjects such LO and could have effect on teachers' confidence and pedagogical skills.

With regards to the CAPS document content knowledge requirements, Swarts et. al (2015: 100) contend that teachers could struggle to implement content knowledge requirements as these can "restrict" their understanding, experiences and perspectives with regards to the environment when it comes to "raising the cognitive awareness of learners." Swarts et al. (2015: 102) are of the opinion that the teacher's role can be reduced to no more than an implementer of predetermined learning programmes as set out in the curriculum policy statement (Grussedorff, Booyse and Burroughs, 2014: 58).

The following research question were formulated to guide this thesis.

1.7 RESEARCH QUESTION

This thesis seeks to answer the following main research question:

> *How are teachers implementing environmental concepts in the LO CAPS curriculum in grade 9 in Western Cape high schools?*

The main research question was further divided into the following three sub-questions to guide this thesis:

1. *How do grade 9 teachers understand the required implementation of environmental concepts in LO?*
2. *What possibilities do grade 9 teachers envisage for implementing environmental concepts in LO?*
3. *What challenges, if any, are grade 9 teachers facing when implementing environmental concepts and how can teachers overcome them?*

1.7.1 Aims and Objectives of the Research

Aims:

The following broad aims guided the overarching purpose of the thesis:

1. *To investigate teachers' understanding for implementing environmental concepts in LO.*
2. *To identify possibilities teachers envisage for implementing environmental concepts in LO.*
3. *To identify challenges in teaching environmental concepts in LO and how to overcome them.*

The above aims resulted in the following objectives to be investigated.

Objectives:

The following research objectives were investigated in the thesis:

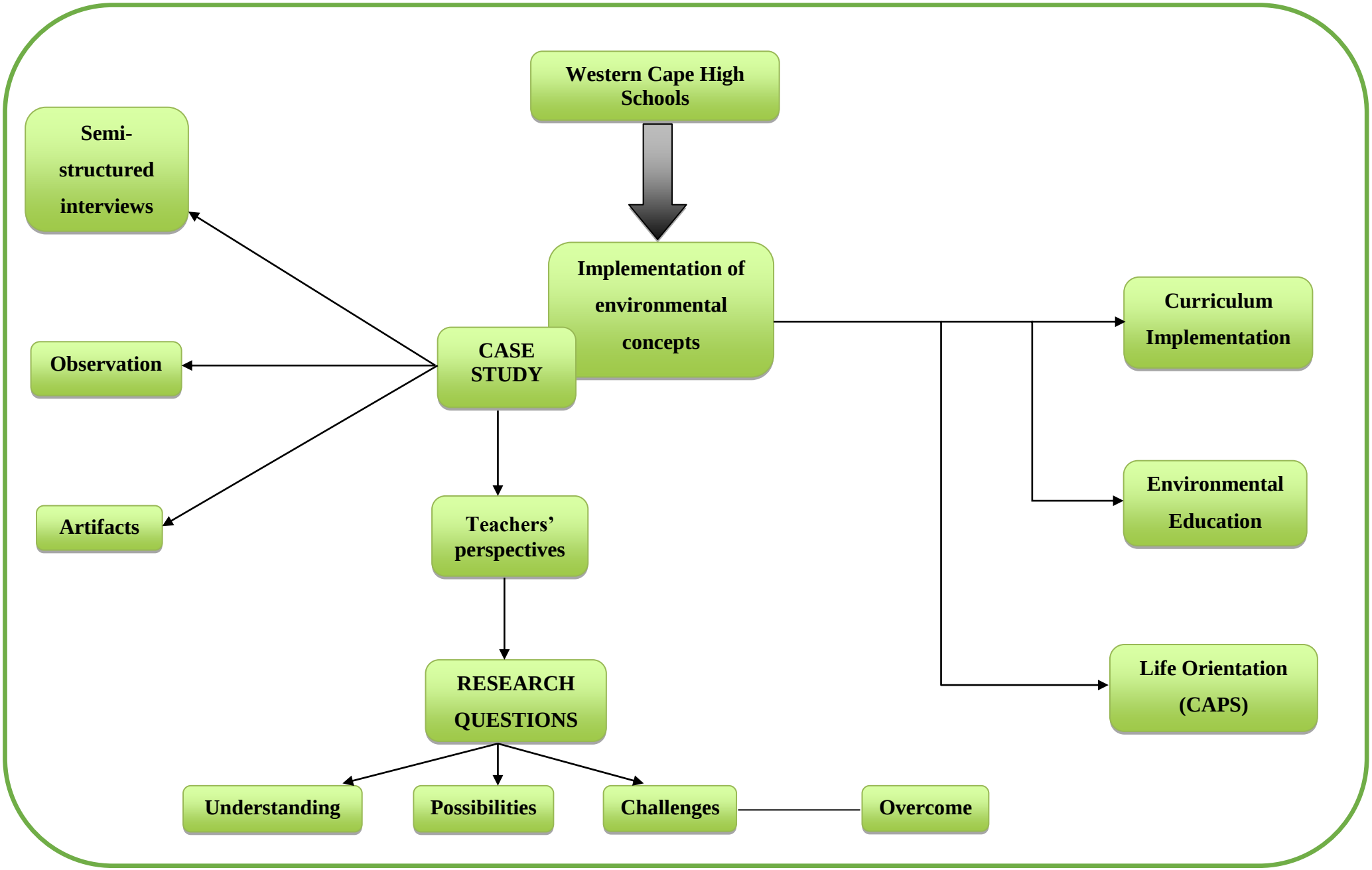
1. *To analyse teachers' responses to the requirements to teach environmental concepts as part of the LO curriculum.*
2. *To understand teachers' experiences of teaching practices/ and approaches to implement the curriculum imperatives related to the environment in LO.*
3. *To understand teachers' perspectives on the environment and issues as presented in the LO curriculum.*

To obtain the above aims and objectives, the following methods will be used to achieve the purpose of this thesis.

1.8 PRESENTATION OF THESIS

Data were organised around the three main areas of this thesis, that is, curriculum implementation and EE implementation in the subject LO. The research question and sub-questions formed the backbone and consist of interviews, observation and artifact data. The following diagram gives a presentation of this thesis:

Figure 1.1 Presentation of Thesis



1.9 RESEARCH DESIGN AND METHODOLOGY

1.9.1 Research Design

According to McMillan and Schumacher (2010: 20) a research design "describes the procedures for conducting a study, including when, from whom, and under what conditions the data will be obtained". It is therefore the plan that describes the point of departure of how you intend to conduct the research using the appropriate methods of data collection to address the research problem. This thesis followed a qualitative research approach. Qualitative research is based on the constructivist paradigm, also called the interpretive paradigm according to McMillan and Schumacher (2010) (the latter term was used in this study), "which assumes that multiple realities are socially constructed (McMillan & Schumacher, 2010: 6) through individual and collective perceptions or views of the same situation." I chose this approach because it accentuates the gathering of data on naturally occurring phenomena in the form of words to achieve a deep understanding of the situation. It could provide in depth information of the situation as experienced by teachers and it was also best for answering how and why questions. Four teachers from three Western Cape high schools, responsible for teaching LO in grade 9, constituted the target group.

The strategy of inquiry chosen, is a case study. The implementation of environmental concepts in LO by teachers in Grade 9 was the case being studied. Yin (1989), as one of the main proponents of case study research, describes a case study as a flexible form of inquiry best suited for studying a particular phenomenon within its natural context. Stake (1995) states that a case is selected because of its uniqueness or it is used to illustrate an issue. Creswell (2008: 476) further refers to a case study as "in-depth exploration of a bounded system based on extensive data collection". McMillan and Schumacher (2010: 344) argue that "being bounded means being unique according to place, time and participant characteristics".

I used a "nested case study approach" as described by Lotz-Sisitka and Raven (2004) and also referred to as a "collective, multiple or multisite case study" by McMillan and Schumacher (2010: 345). Each school presented a case within the broader case (the implementation of environmental concepts in LO CAPS for grade 9). Each case study (school) consisted of three case elements that formed part of the research, that is, case element 1- contextual profile of schools; case element 2 – participants; and

case element 3 - teaching practices. Four participants (teachers) gave their perspectives around the implementation of environmental concepts in LO in grade 9 through the nested case and therefore provided insight to this research study. In addition, the case was intended to provide "detailed, specific accounts of particular circumstances" of perspectives rather than "offering broad, generalisable findings" (Stake: 1995). The research questions were therefore answered through the nested case with individual teachers as the unit of analysis.

1.9.2 Research Paradigm

An interpretive paradigm guided this thesis and was developed inductively "relying on teachers' perspectives of the situation as it is" (Creswell, 2003: 9). This paradigm shaped my approach as I was interested in understanding LO teachers' views, knowledge and experiences of implementing environmental concepts in grade 9. My interpretation as a researcher "could not be separated from my own background, contexts and prior understandings" (Creswell, 2009: 176) because multiple views and opinions were presented in this study. I was aware of the potential for bias (my own) as a former grade 9 LO teacher, but attempted at all times to avoid any personal judgments of the data and research process.

1.9.3 Site Selection

I chose three high schools in the Western Cape to gather data for this thesis and located teachers teaching LO to grade 9 learners. Viewpoints and perspectives of teachers with regard to the implementation of environmental concepts in LO are present and can be studied in these schools.

1.9.3.1 Sampling

A purposeful or purposive sampling (McMillan and Schumacher: 2010) method was used from which a small number of participants were selected at each school. Purposeful sampling has the following strengths and was best suited for this research study:

- *Less costly and less time-consuming*
- *Ease of administration*

- *Assures receipt of needed information* (McMillan and Schumacher, 2010: 140).

I was interested only in the perspectives of Grade 9 LO teachers regarding their teaching experience of environmental concepts and approached them to best answer the research questions. These teachers could provide the best information to address the purpose of this thesis. Four teachers from three Western Cape high schools responsible for teaching LO to grade 9 learners were selected to provide the specific "information" related to the research questions without the "need or desire to generalise" (McMillan and Schumacher, 2010: 489) beyond this particular case study.

1.10 DATA COLLECTION METHODS

Methods for collecting empirical data included semi-structured interviews, observation, collection of artifacts as well as documents which included the CAPS policy document for LO senior phase (grades 7- 9). An interview schedule, observation schedule and artifact rubric were developed in order to achieve the aims and objectives of this thesis. A brief discussion on these methods will follow:

1.10.1 Semi-structured interviews

Interviews were conducted face-to-face between me and each participant in the classroom setting. Interviews consisted of questions related to the understanding and implementation of environmental concepts required by the LO CAPS curriculum for Grade 9 in high schools. Semi-structured interview questions were formulated drawing on the work of Dillon (2009) to allow teachers to give open-ended responses providing in depth information.

An interview protocol was developed as part of the thesis to guide me through the interviewing process. Teachers were debriefed after the interview to highlight "any problems generated by their research experience in order to rectify those problems" (Babbie, 2007: 67). Interviews were recorded by audiotaping and transcribed by myself.

1.10.2 Observation

An observation protocol (see appendix 8) as described by Bogdan and Biklen (1992), observation schedule (see appendix 9) and observation rubric (see appendix 10), were developed as part of the study to guide me through the classroom observation process. It included demographic information about the time, place, and date the observation took place. It also included a description of the lesson (how teachers engaged with learners) as well as reflective notes, which included my personal thoughts and themes that emerged during the observation process. The observation schedule was developed and guided classroom observation of LO lessons linked to environmental concepts for grade 9. The observation rubric (see appendix 10) allowed me to see if teachers comply with CAPS policy document requirements. Classroom observation was conducted during term 3, week 4-6 and the environmental concepts sustainable development and permaculture were presented. Lessons of teachers in the sample were observed; for example, teachers' methods, content and resources and these were viewed in terms of EE pedagogies. Observations therefore allowed me "first-hand experience with each participant" (Creswell, 2009: 179).

1.10.3 Documents

The LO CAPS Policy document for grade 9 was the official document carefully analysed to investigate the aims required and also to gauge the way teachers are dealing with the curriculum requirements. The following environmental concepts are presented in the LO CAPS policy document for grade 9 (DBE SA, 2011: 20-2):

1. Environment

Term 1 (week 1-3) under theme, "Development of the self in society"

"Influence of the environment on personal lifestyle choices."

2. Sustainable development

Term 3 (week 4-6) under theme, "Health, social and environmental responsibility"

Different types of volunteer organisations: contributions of community-based and non-profitable organisations to social and environmental health and sustainable development."

3. Environmental health

Presented under the different types of volunteer organisations (Mahlobo, et al., 2013: 154-5).

4. Permaculture

Term 3 (week 4-6) under theme, “Health, social and environmental responsibility”
The process of content analysis was used to investigate the LO CAPS policy document. Babbie (2007: 320) defines content analysis as the study of recorded human communications towards finding the answer to the classic question of communications research: “Who says what, to whom, why, how, and with what effect?” Denscombe (2007: 237) argues that content analysis has the potential to disclose many hidden aspects of what is being communicated through written text. Gerbner et al. (1969) and Krippendorf (2004) support this view by stating that researchers do not have to base the analysis on what the author thought they were saying when the text contains more tangible evidence about its message.
During classroom observation, I made a collection of artifacts within the classroom to better understand teachers’ engagement with the LO policy document.

1.10.4 Artifacts

Lesson plans developed by teachers and teaching resources (textbooks and other materials) for teaching LO in grade 9 were analysed as part of evidence of teachers’ engagement with curriculum requirements. Artifacts are described by McMillan and Schumacher (2010: 361), as “tangible manifestations that describe people’s experience, knowledge, actions, and values”.

Two types of artifacts were analysed in this thesis. Firstly, official documents such as lesson plans developed by teachers and teaching resources (textbooks and other materials) for teaching LO in grade 9 were analysed. “These documents describe functions and values and how various people define the organisation” as noted by McMillan & Schumacher (2010: 361). Secondly, “objects are created symbols and tangible entities that reveal social processes, meanings and values” (McMillan and Schumacher, 2010: 362). In this case, posters were analysed as part of evidence of teachers’ engagement with curriculum requirements for the subject. Searching for ideas related to environment and environmental issues also formed part of the of the data collection method under artifacts.

1.11 DATA ANALYSIS

The process of data analysis according to Creswell (2009: 183) involves making sense out of text and image data, preparing the data for analysis, conducting different

analyses, moving deeper and deeper into understanding the data, representing the data, and making interpretation of the larger meaning of the data. The analysis of qualitative data was completed in an evolving process. In the following section a short discussion on data analysis will be presented with a more detailed discussion in chapter 3.

1.11.1 Data Analysis Process

The data analysis process involved different processes at different stages of this research study. Interview data was gained by recording interviews and transcripts were developed subsequently and analysed for themes. Observation data were gathered by observing teachers presenting environmental concepts to grade 9 learners. Artifact data were obtained while observing teachers teaching environmental concepts to grade 9 LO learners. The CAPS policy document was analysed through the process of content analysis.

A common method of data analysis used in qualitative studies is constant comparison, where researchers look for similarities and differences in the data. Themes are developed from the data through constant comparison, in which I "continually search for both supporting and contrary evidence about meaning of each category" (McMillan & Schumacher, 2010: 377). The goal of constant comparison was to see how teachers are responding to the requirements of teaching environmental concepts as part of the LO curriculum policy document. Transcribing of data will be based on the research question. Themes were analysed through the process of thematic analysis, which is one of the two kinds of content analysis processes in qualitative research. A brief discussion on thematic analysis will follow.

1.11.1.1 Thematic Analysis

Braun and Clarke (2006: 4) consider thematic analysis as the first qualitative method of analysis that researchers should learn, as it provides core skills that will be valuable and states that it should be seen as a basic strategy method for qualitative analysis. This is identical to Boyatzis (1998) who portrays thematic analysis not as a specific method but as a tool to use across different methods. A definition given by Braun and Clarke (2006) will be explored:

> *"It is a method for identifying, analysing, and reporting*

patterns (themes) within data. It minimally organises and describes your data set in (rich) detail."

Thematic analysis therefore allowed the occurrence of rich and detailed accounts of grade 9 LO teachers' experiences in implementing environmental concepts and to interpret various aspects of the research topic as stated by Boyatzis (1998).

1.11.1.2 Defining a Theme

According to Braun and Clarke (2006: 10) a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set. An important question to address in terms of coding is what counts as a pattern/theme, or what size does a theme need to be? Furthermore, the 'keyness' of a theme is not necessarily dependent on quantifiable measures – but in terms of whether it captures something important in relation to the overall research question (Braun and Clarke: 2006).

1.11.1.3 Thematic Analysis Steps

The following steps assisted me in answering the research question. Braun and Clarke (2006: 15-23) identify six steps to follow when performing thematic analysis. A more detailed discussion in chapter 3.

Step 1: Familiarising yourself with your data; Transcription of verbal data
Step 2: Generating initial codes
Step 3: Searching for themes
Step 4: Reviewing themes
Step 5: Defining and naming themes
Step 6: Producing the report

Various steps have to be followed in order for research to take place, such as ethics in research.

1.12 ETHICS IN RESEARCH

Ethical clearance was an important factor in this thesis as elements such as consent, access to sites or information had to be obtained. Application for ethical clearance was made to Stellenbosch University and permission was sought from the Western Cape Education Department (WCED) to access schools to recruit respondents. Access

to schools allowed me to get the permission of grade 9 LO teachers to take part in this study. Teachers' "informed consent" was obtained in advance in order to provide information through semi-structured interviews, access to artifacts, which included teachers' resources and lesson plans for LO as well as taking part in classroom observation (Code of Ethics of the American Anthropological Association: 2009).

Parents were also informed, by means of a letter, of my presence during classroom observation via school management (see appendix 5). It was important to follow these procedures as "questions of access, power, harm, deception, secrecy and confidentiality are all issues the researcher had to consider and resolve in the research context" (Burgess, 1989: 5).

1.13 AUTHENTICITY OF RESEARCH FINDINGS

1.13.1 Reliability and Validity

According to Aspinwall et al. (1994), reliability and validity are key tests in judging accuracy in research. Reliability "demonstrates that the operations of a study which is the data collection procedures, can be repeated, with the same results" (Yin, 1994: 144). With regards to validity, Bush (2002: 63) states that validity can be ensured by the deliberate strategy of treating each participant as a potentially unique respondent. Authenticity of research findings will also include triangulation to enhance the reliability and validity in this thesis.

1.13.2 Triangulation

To ensure authenticity of research findings, triangulation was used to enhance the validity. Triangulation, defined by Cohen and Manion (1994: 233), "is the use of two or more methods of data collection in the study of some aspects of human behaviour. Triangulation techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint." Data from teachers' views, analysis of their lesson plans and related documents as well as observing their actual lessons formed part of the triangulation process. This increased the accuracy of results and data validity was ensured as it answered the question: Are teachers doing what they say they do?

All interviews were recorded to ensure trustworthiness of the transcripts as opposed to writing down the findings. Recordings are the words of the participating teachers

themselves. Transcripts were given to the teachers, member checking to ensure that data had been recorded and interpreted in the manner they intended it to be to ensure more rigorous data work.

1.14 LIMITATIONS OF THESIS

The study was conducted at three high schools in the Western Cape, each school representing a case. Four teachers took part in the study and it cannot be generalised as it is based on the unique perspectives of the four LO teachers only. The thesis was limited to LO teachers in grade 9 teaching environmental concepts under the theme health, social and environmental responsibility as per the CAPS policy document. The thesis was linked to environment and environmental issues in LO and is therefore a focused look at EE implementation in LO.

1.14 SIGNIFICANCE OF THESIS

The implementation of new curriculum content and its attendant requirements is not an easy process for teachers as in research projects it emerged that they lack the capacity and knowledge to implement effectively. Problems and barriers include a lack of knowledge, confidence and pedagogical skills which all hamper implementation. This thesis is related to the problem area of curriculum implementation and is focused on how grade 9 LO teachers cope with the curriculum requirements for implementing environmental concepts in LO as a subject of the CAPS curriculum. Not much research was done on EE implementation linked to LO in CAPS curriculum as the curriculum is fairly new and it takes time to see how teachers cope with curriculum change. The results of this thesis could therefore be of great benefit to:

- The Department of Basic Education - Empirical data will provide information to the Department when designing curriculum content to take into consideration the perspectives of teachers.
- Grade 9 LO teachers - Guidelines when implementing new curriculum content, particularly the section related to environmental concerns.
- Grade 9 learners - Ensure they develop a sense of competence and achievement towards nature and the broader environment as mentioned earlier in this chapter.

1.15 OUTLINE OF THESIS

Chapter one focused on a brief outline of this thesis with specific reference to background to the study, motivation for the study, problem statement, research questions, aims and objectives of the study, research design and methodology. It also included an overview of the data analysis process, ethical consideration as well as authenticity of the research findings.

Chapter two deals with the existing literature relevant to the study. This chapter reviews the three main topics that formed part of the theoretical framework of this study, namely, curriculum change and policy implementation and EE implementation in LO as a subject in the current school curriculum in South Africa called the Curriculum Assessment Policy document (CAPS). It also highlights current issues of EE implementation in LO under the CAPS curriculum.

Chapter three identifies and describes the methods used for obtaining empirical data to answer the research question. It consists of the research design, research paradigm, sampling, data collection methods, data analysis and interpretation, ethics and triangulation.

Chapter four focuses on data presentation and preliminary analysis of empirical data. Themes that emerged from the interviews, classroom observation and artifacts are presented in line with the research question.

Chapter five discusses the findings and further analysis of the data. All relevant literature, aims, objectives and data in chapter two are linked in the discussion.

Chapter six concludes the thesis with comments and recommendations for further research.

1.16 SUMMARY

The chapter gives an overview of the background to the study, motivation behind this study, problem statement, research questions and aims and objectives of the thesis. The chapter also highlighted the research design, data collection methods, analysis of data, ethics as well as other additional information involved in this thesis.

The renewed focus on content knowledge as laid out in CAPS, could become the biggest challenge therein it can limit LO teachers' perspectives and understanding with regard to social and environmental concerns when it comes to raising the cognitive awareness of learners. To transfer knowledge regarding complex social and environmental concerns through prescribed textbook activities, to passive learners who then absorb it, has the potential of isolating them from their local social context (Swarts et al. (2015).

Not only can such an approach be seen as 'learner-centred emptiness' (Lotz-Sisitka, 2002: 114), but it can also, according to Le Grange (2007: 11), "be labelled as a lesson in hypocrisy, for it highlights awareness of environmental concerns above active involvement."

Chapter two will discuss the literature relevant to this thesis.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In chapter one I presented an overview of why this thesis was important and outlined the background and motivation to the study. The chapter also outlined the statement of the problem, aims and objectives, research design as well as research questions. Chapter two dealt specifically with the existing literature relevant to this thesis by means of a discussion on what was already done on the specific research problem. According to Merriam (2009) the purpose of a literature review in a research study can be defined as that part of research that shows what is already done in the field of study and highlights how the study has progressed in a specific field or what elements have been challenged. Merriam (2009) refers to the literature review as "previous research" and coordinates, integrates and evaluates the important thinking and research on a particular topic. Further, the literature is essential to identify the overall theoretical framework of a study, as well as moulding the problem statement (Merriam, 2009: 75-6). Moodley (2013) is of the opinion that the researcher should include in the literature review related information from books, journal articles, media reports, policy documents, dissertations as well as theses. These relayed information and documents therefore assisted me to focus on the importance of the study in order to answer the research question.

Three main topics are discussed and form the theoretical framework of this study: *Curriculum change and policy implementation, EE implementation in LO as a subject in the current school curriculum in South Africa, and the Curriculum Assessment Policy document, known as CAPS.* The relevant literature will now be presented. Firstly, a definition of the construct curriculum will be explored.

2.2 CONSTRUCT CURRICULUM DEFINED

The construct curriculum in itself is referred to as a "construct" according to Carl (2009: 22). In support of the construct curriculum, Reddy (2014: 13) highlights the word 'social' and argues that the concept itself derived its meaning from human influences. In order to understand what curriculum is and how it works, it is important

to look at it from a historical perspective. The literal meaning of the word curriculum is *'curro'*, which is a Latin word, meaning "I run" (Sönghe, 1977: 38; Brubaker, 1982: 2). Furthermore, it refers to a race, a track or a racetrack where learners are under the supervision of the teacher, referred to as "an educational track" as mentioned by Carl (2009: 27).

The development of curriculum as a social construct is fairly new although its roots can be traced back to ancient Rome and Greece (Doll: 2002). According to Doll (2002) in Reddy (2014: 11), "the courses of study followed in ancient Rome and Greece were really open and student choice was a high determining factor of what they chose to be involved in". Later, a more formal and structured perspective developed in the mid-1500s and early 1600s and the construct curriculum started to take on a form of organised and sequential guide to learning which was very different to the more itinerant and open learning ideas of ancient times. According to Doll (2002) in Reddy (2014: 12), Peter Ramus was the first person to use the word 'curriculum' to describe a "sequentially ordered map of knowledge which he believed was a general outline of fit-all knowledge." The construct, however, has different meanings depending on the particular context in which it is understood as argued by Reddy (2014). Cornbleth (1990) agrees that curriculum is the social interactions between students, teachers, knowledge and milieu but does not see it as a fixed programme or structured linear process.

Schwab (1983) in Dillon (2009) proposed the following definition of curriculum:

> *The construct curriculum refers to what is successfully conveyed to differing degrees to different students, by committed teachers using appropriate materials and actions, of legitimated bodies of knowledge, skill, taste, and propensity to act and react, which are chosen for instruction after serious reflection and communal decision by representatives of those involved in the teaching of a specified group of students who are known to the decision makers (Dillon, 2009: 343).*

The following definition is proposed by Tanner and Tanner (1975: 48-9):

> *The planned and guided learning experiences, formulated through the systematic reconstruction of knowledge and experience, under the auspices of the school, for the learner's continuous and wilful growth in personal-social competence.*

Both the above definitions tend to lean in the direction of curriculum being a product or document that guides and needs to be followed in practice. This assumes that curriculum is something that can be developed by particular processes with stakeholders serving as contributors to this process and product.

Carl (2009: 39) mentions and discusses 4 conceptual phases of curriculum development.

2.2.1 Conceptual Phases of Curriculum Development

*Curriculum desig*n is that phase during which a new curriculum is planned, or during which the re-planning and review of an existing curriculum is done after a full re-evaluation has been carried out.

Curriculum dissemination (which is often equated with implementation in the curriculum literature) is that phase in curriculum development during which the curriculum consumers are prepared for the intended implementation and information disseminated.

Curriculum implementation. The phase during which the relevant design is applied in practice.

Curriculum evaluation is that phase during which not only the success and effectiveness of the curriculum are evaluated but also the effect thereof on the learners.

Curriculum implementation formed an important element of this study and was discussed at a deeper level. Curriculum implementation was discussed at three levels, namely, at a broader level (curriculum change and policy implementation), EE implementation in LO as a subject in CAPS. For the purpose of this thesis, curriculum change and policy implementation of the LO CAPS policy document will be

investigated to see how teachers are coping with its implementation requirements with regards to environmental concepts. A discussion on curriculum change and policy implementation follows.

2.2.2 International Overview of Education and change

Education as a professional field is continually changing and context in which curriculum change is implemented depends largely on factors such as the context of a country. Reddy (2000: 24) considers "the need to engage with change continuously" and this is more important than the change itself. Hall (1998: 2) defines change as the "introduction of an innovation, where the main objective is to improve the outcomes through an alteration of practices." In addition, Morgan (2001) stipulates that when new curricula are introduced, change in value takes place while new technologies define how we teach and learn.

Flores (2005: 401) highlights that societal expectations and political and social priorities change, placing new demands on schools and teachers. Hong Kong, for example, went through a series of reforms to meet the needs of its citizens through the introduction of new school subjects such as social studies (1975) and integrated science (1976). Fullan (1991), furthermore states that change does not always result from putting into practice the latest policy, but involves changing the cultures of classrooms, schools and universities as described in Reddy (2000: 24). Reddy (2000) also highlighted in his research on 'issue-based curriculum development', that teachers as curriculum change agents in the process of implementation could face challenges as they are the main role-players affected by curriculum change.

2.2.3 South African Context (pre-1994)

The education system pre-1994 was built on Christian norms and values in order to prepare an Afrikaner Christian culture among all citizens (Ntshoe: 2002). Chisholm (2005: 204) mentions that the Christian National Education played a powerful role in South Africa pre-1994. During this period White learners were enriched for higher-order, abstract and self-directed thinking skills (Reed et. al, 2012: 172) while non-white learners were educated technically and vocationally for a lower-class workforce under the Bantu Education Policy Act of 1953, (Simmonds, 2014: 34). By the end of the 1980's and beginning of 1990's, the National Education Policy Investigation

(NEPI), National Education Crisis Committee (NECC) and the National Education Training Forum (NETF), considered a move away from Apartheid Education (Reed, 2012, 174) with a focus to change education practices from a content-based to an outcome-based curriculum (Reddy: 2000) in order to ensure transformation in schools.

2.2.4 South African Context (post-1994)

The introduction of Outcome-based Education (OBE) could be regarded as the biggest curriculum change to have been implemented in South Africa. From the start of our democracy the curriculum was built on values inspired by the Constitution (Act 108: 1996) to address the imbalances of the past. In support of this transformation, a number of policy documents for education were compiled (Reddy, 2000). The Curriculum framework document of July 1999, for example, required teachers to participate in curriculum development processes to improve curriculum development skills and these new roles and functions teachers have been found to be lacking in capacity according to Lotz & Robottom (1998).

2.3 CURRICULUM CHANGE PERIODS IN SOUTH AFRICA

Fataar (2006: 642) identifies four periods of curriculum change in South Africa called ‘policy cycles’, each representing a distinctive political ensemble. The following policy cycles are noted:

The *first two cycles* provide information on the curriculum review in late 1994 still under the apartheid government (DoE SA: 1995), referred to by Simmonds (2014, 37) as the “purification stage in a metaphorical sense.”

The *start of OBE* and the negotiation that took place between 1994 and 1997 (DoE SA, 1997), a curriculum developed in consultation with teachers (Reed et. al, 2012, 175).

The *revision of OBE* in 2000 and introduction of National Curriculum Statement (NCS) in 2002 (DoE SA: 2002), and

A *report in 2009*, showing many shortcomings on the NCS, led to the introduction of the National Curriculum and assessment Policy Statement, (CAPS) (DBE SA, 2011b).

The following discussion is an overview of these curriculum changes and implementation in South African school system since 1994.

2.3.1 CURRICULUM 2005 (OBE) 1997

Curriculum 2005 is regarded as the first democratic education curriculum, introduced in 1997 and concentrated on a learner-centred element as described by Chisholm (2005). Furthermore, "its emphasis was on bringing the local, hidden, silenced knowledge, and everyday realities of learners to surface" (Chisholm, 2005: 194). According to Pillay (2009: 221), the South African Government was obliged to engage in large-scale educational reform to change the education system to conform to the expectations of OBE. Spady (1994), an Australian educationist, coined the term OBE, which is based on the ideals of a labour and economic discourse. OBE refers:

> *To the system of education where the focus is on learners*
> *achieving outcomes with learning, teaching and assessment*
> *all framed in terms of what learners are able to do (Spady, 1994)*

The plan of OBE was to address the aftermath of Apartheid education and drive South Africa into the epoch of democratic education. As the first major curriculum statement of a democratic government, it signalled a dramatic break with the past (Review Committee on C2005, 2000: 9).

In 2002, however, C2005 was reviewed and revised (Chisholm, 2000; DoE SA, 2001a), as the Review Committee (DoE SA, 2000: 15) identified difficulties that challenged the education system. Some of the major difficulties were language, overcrowding and progression and integration. This led to the introduction of the Revised National Curriculum Statement (RNCS) (DoE SA, 2002a), known as the National Curriculum Statement (NCS).

2.3.2 REVISED NATIONAL CURRICULUM STATEMENT (RNCS) 2002

According to the RNCS policy document (DoE SA, 2004: 2), the RNCS was not a new curriculum but a modification of C2005, which attested its adherence to OBE (Moodley, 2013: 31). With the many difficulties that accompanied OBE, a Ministerial Committee was appointed in 2000 to review C2005 with Professor Chisholm as the

chairperson (Chisholm, 2000 in Simmonds, 2014: 43). Chisholm (2005: 205) describes the RNCS (DoE SA, 2002a) as a "historical product of its time, involving multiple players in its formation."

However, it failed to deliver and Themane and Mamabolo (2011: 8) highlight the following as the main reasons:

> *Failed to assist teachers to select socially valued knowledge, which is the scope, sequence, depth, skills and content.*
>
> *Concentrated on nation building and the broad philosophy underpinning the education system, and left schools and teachers to apply it to their contexts.*
>
> *There were no clear policy guidelines on assessment, resulting in confusion with its implementation.*
>
> *The use of various forms of assessment resulted in too much paperwork and became onerous for teachers. The training of teachers was inadequate to cover the workload.*

In 2009 a panel was appointed by the Minister of Basic Education to investigate t why the NCS had failed to deliver and this led to a revision of the NCS and the introduction of CAPS.

2.3.3 CURRICULUM AND ASSESSMENT POLICY STATEMENT (CAPS) 2011

CAPS came as an amendment to the National Curriculum Statement (NCS) Grade R-12 (2002) and a switch to a more content referenced curriculum (Pinnock, 2011) following the same procedure and processes as the National Curriculum Statement (NCS) Grades R-12 (2002). Eight primary recommendations were brought forward in the Task Team review of the NCS (2002) and accepted by the Department of Basic Education, included (DBE SA, 2009: 62-7):

1. A coherent, clear, simple five-year plan to improve teaching and learning across the schooling system that is widely communicated and focused on the improvement of learner performance.

2. Overall, the policies must be clear, succinct, unambiguous and provide measurable and essential learning knowledge.
3. The role of subject advisors as school-based subject experts needs to be affirmed with a specific job description and performance plan.
4. Teacher workload and administrative burden need to be taken into consideration
5. One consistent set of terminology and grading descriptions for assessment to ensure consistency and clarity.
6. Subjects in the Foundation Phase and the Intermediate Phase need to change.
7. Learning and teaching support materials must be developed and aligned with the CAPS policy document.
8. In-service teacher training must be targeted and subject-specific and address relevant focus areas such as the use of textbooks and training in subject discipline content, for example.

CAPS was named the National Curriculum Statement Grade R-12 and included the following core documents:

1. The newly developed, single comprehensive Curriculum and Assessment Policy Statement (CAPS) for each school subject;
2. The policy document on national policy pertaining to the programme and promotion requirements; and
3. The policy document on National Protocol for Assessment (DBE SA, 2011b: 3).

Implementation per grade was as follows, starting from 2012 (DBE SA, 2011b: 3):

1. January 2012 Grade R-3 and Grade 10
2. January 2013 in Grades 4-6 and Grade 11
3. January 2014 in Grades 7-9 and Grade 12

In the next section implementation as a process will be discussed with various role-players in such a process.

2.4. WHAT IS CURRICULUM IMPLEMENTATION?

First, I will explore a definition of what curriculum implementation entails. Curriculum implementation as defined by Schubert (1986: 42) is:

> *Traditionally seen as the delivery process, implementation can be considered a system of engineering that takes design specifications through various channels to the teacher and classroom.*

Schubert (in Carl. 2009: 133) indicates further that "implementation should not only focus on execution of instructions but should also acknowledge that improvements occur within instructional-learning circumstances." Two levels can be identified in the implementation process, that is, macro and micro implementation.

2.4.1 Macro Level Implementation

Macro level implementation takes place at a national level when the designed curriculum is communicated as policy with the relevant role-players. In addition, Mostert (1986b) refers to it as the interaction between these role-players and the practice within which it is implemented.

2.4.2 Micro Level Implementation

Micro level implementation takes place within the classroom where local decisions are taken by the teacher. Bybee (1993) refers to teachers as "change agents" and moulders of classroom instruction. The teacher is therefore a ground level curriculum implementation agent and takes on the central role of implementer of curriculum content and applies the relevant design in practice. McLaughlin (1987) further argues that organisations do not innovate or implement change, individuals do, highlighting teachers as implementers of a school policy curriculum.

In the next section a discussion will follow around policymakers and teachers, identified as the main role-players in the process of curriculum implementation. The discussion will also revolve around issues that emerge around curriculum change and policy implementation.

2.4.3 Curriculum Implementation and Policymakers

Curriculum implementation can be regarded as the most difficult phase of a change process as most shortcomings of the change may appear at this stage as highlighted by Ndou (2008). In addition, Fullan and Hargreaves (1992) contends that the early implementation of change is inevitably accompanied by difficulties. McLaughlin (1987) identifies three interrelated levels of implementation during which implementation issues can arise and be identified. These are discussed below.

2.4.4 First Level of Policy Implementation

This is the questionable relationship between policies and execution of programs. and it is mentioned that factors such as "size, intra-organisational relations, commitment, capacity, and institutional complexity that shaped '*responses to policy*' should be taken into account during this period" (McLaughlin, 1987: 172).

2.4.5 Second Level of Policy Implementation

The second level implementation unfolds in implementation processes and focuses on relations between policy and practice. Lessons from policy indicate "policy cannot always mandate what matters to outcomes at the local level, individual incentives and beliefs are central to local responses, effective implementation requires a vital balance of pressure and support, policy-directed change ultimately is an issue of the smallest unit" (McLaughlin, 1987: 174).

2.4.6 Third Level of Policy Implementation

Level three analysts have the issue of integrating the macro world of policymakers with the micro world of individual implementers as described by (McLaughlin, 1987). Macro-level generally provides insufficient guidance to policymakers interested in understanding program outcomes that could be positive or negative, evaluating alternatives, assessing internal work requirements, or developing models of how policies operate in practice (McLaughlin, 1987: 177).

Conversely, micro-level analysis ignores systemic attainments and unanticipated consequences for the institutional setting as a whole and cannot identify the expected organisational consequences or system-wide effects of a policy. Micro-level analysis thus provides limited guidance to policymakers faced with system-wide decisions as

argued by McLaughlin (1987: 177). Weaverly and Lispky (1977) investigated that policy depends finally on the individual, known as the "street level bureaucrat" Sabatier (1998) and Surel (2000) argue that the implementation perspective is a move away from organisations and its objectives and rather focus on individuals with their perspectives and capacity. Similarly, McLaughlin (1987: 172) states that the outcomes of the best planned, best supported and most promising policy initiative finally depends on what happens as individuals throughout the policy system interpret and act on them. In this study, the teacher is the individual and the next section will discuss the role of teachers with regard to policy implementation and its related issues.

2.4.7 Curriculum Implementation and Teachers

Cognitive frames have been used in studies of policy implementation in education (Ball, 1994; Spillane, 2000) as well as other areas of social sciences" (see Blignaut, 2008: 102). These studies have shown that teachers' cognitive frames could have an impact on their thinking and perception of change. This relates to what Spillane (2006) suggests, that teachers' prior beliefs and practices can pose challenges not just on the grounds that teachers are unwilling to adjust to new policies, but also because their existing subjective knowledge may interfere with their capacity to interpret and implement a curriculum change in ways consistent with policymakers' intent. According to Blignaut (2008: 103) "the fundamental nature of perception is that new information is constantly interpreted in the light of what is already understood." Piaget (1972) emphasised the significance of what he termed 'accommodation',or restructuring of existing knowledge and this could pose a major challenge when implementing a new curriculum. Flavell (1963: 50) on the other hand, contends that assimilation is a conserving process, as it strives to "make the unfamiliar familiar, to reduce the new to old". Blignaut (2008: 106) is of the opinion that if knowledge is presented to teachers that does not fit their particular framework of how knowledge is constructed, it could lead to internal cognitive conflict.

Teachers' knowledge, views and experiences could therefore influence the way they interpret the construction of new understandings. Sosniak et al. (1994) in his study mentions that 'new curricula' presented views of the subject matter, which did not match teachers' views, and required teaching strategies that were unfamiliar to

teachers. In these instances, teachers tend to revert to what they know and are familiar with (Pithouse: 2001). This can be related to what Spillane (2002) suggests, "what we see is influenced by what we expect to see". In a study done by Catling (2013: 31) in Australia, he found that, with the introduction of a new curriculum, it was noted that implementation agents (teachers) suffered from innovation fatigue after an introduction of six subjects of the curriculum.

The question that arise: Should teachers be considered in policy and curriculum development processes? Cotton (2006) states that curriculum developers should take into account teachers' beliefs in designing new curriculum materials, these materials are unlikely to be implemented in their intended format and teachers' attitudes should therefore be considered in the development of new curriculum. Various critics have argued strongly that the role of education should be to encourage independent thought, not to promote a specific world-view as stated by Jickling, (1992), and that the teacher should impart knowledge rather than attempt to act as an agent of change (Aldrich-Moodie and Kwong, 1997). This study was therefore undertaken to see how teachers cope with the CAPS policy curriculum requirements.

Since CAPS is in its earlier stages of implementation, this research study aims to identify how CAPS is doing in practice, how teachers cope with the LO policy document's requirements, what possibilities they envisaged, challenges they experience and how they overcome these challenges. The success or failure of any innovation, however, is important to provide feedback to those responsible for curriculum development and highlight challenges currently experienced by teachers who are responsible for curriculum implementation. Carl (2009: 17) acknowledged this and states that "it is necessary to reflect theoretically on the subject of the curriculum with a view not only to understand practice better but also with a view to improving it."

A discussion on EE policy and curriculum implementation will follow as the second element of this thesis.

2.5 ENVIRONMENT AS A FIELD

2.5.1 Construct Environment Defined

The term "environment" was always seen as referring to the natural world in which we live with various organisms interacting with one another as stated by Le Grange and Reddy (2009: 2). However, the impact of humans on the environment as described by Loubser (2014: 41) evolved from a "people-environment relationship understanding to a sophisticated interpretation of humanity's interaction with all aspects of the environment." This is largely due to human activity for resource exploitation (Reddy, 2008) and has now evolved into a worldwide socioecological movement (Loubser, 2014). It is thus clear that the construct environment derived from a human-made perspective. A definition of the construct environment will be explored.

Di Chiro (1987) defines the construct environment as follows:

> *We define (the environment) as such by use of own individual and culturally imposed interpretive categories, and it exists as the environment the moment we name it and imbue it with meaning. Therefore, the environment is not something that has reality outside or separate from ourselves and our social milieu. Rather, it should be understood as the conceptual interactions between our physical surroundings and the social, political and economic forces that organise us in the context of these surroundings. It is in this sense that we can say that the concept 'environment' is socially constructed.*

Fien (1993) further explains that the environment is a social construct referring to the interactions between social and bio-physical systems and Reddy (2011: 11) conforms to this definition and defines it further as a "complex social construct." O' Donoghue (1995) went further with his perspective of the environment and included four dimensions.

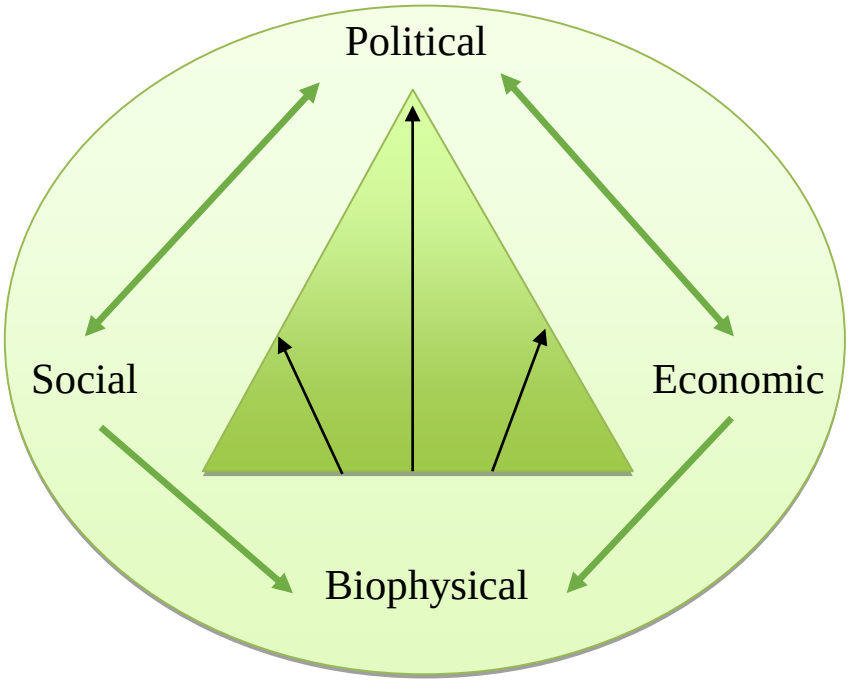
2.5.2 Dimensions of the Environment

O' Donoghue (1995) included the biophysical, economic, social and political dimension of the environment:

- The biophysical dimension includes the life-giving source of our existence. The natural environments include all living things, that is, plants and animals.
- The social dimension includes people and their interaction with each other. For example, people living together in a specific community and their social interactions with one another.
- The economic dimension includes people, jobs, money and the exploitation of resources.
- The political dimension revolves around issues of power, policy and decisions. For example, big co-operations influence governments to make decisions on where to build houses, industries, golf courses, etc. (Reddy, 2008).

The following figure shows how the dimensions of the environment interact with one another and how they are dependent on each other:

Figure 2.1. Interaction Between the Four Dimensions



Adapted from O' Donoghue (Share-net, 1995)

This figure presents the interaction between humans and Nature referred to as the socio-ecological interactions as stated by Reddy (2011). The biophysical dimension represents the foundation that supports the economic, political and social dimension.

These dimensions have a major influence on the biophysical dimension, known as environmental issues or risks (Reddy, 2008). Environmental issues arise in all four dimensions and according to Le Grange and Reddy (1997) environmental crises have been shown to exert an impact on a global level and highlight interacting dimensions around human lifestyles characterised by "consumerism, unbridled economic growth and materialism." Another factor contributing to environmental crises highlighted by these researchers seems to be that school curricula play a major role in reproducing ecologically unsustainable values in modern society (Reddy, 2011: 13). A definition of EE will now be explored.

2.5.3 Environmental Education Defined

The concept of EE, is difficult to define, as it can be seen from different perspectives depending on the particular situation or context in which this seems appropriate. The following definition was proposed when EE rose to prominence in the 1970's (Tbilisi Conference, 1977).

> *Environmental Education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems and that has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones.*

This definition focuses on the environment from a biophysical perspective and it came at a time when environmental crises were largely seen as occurring only in the biophysical dimension of the environment. Le Grange and Reddy (2009: 2) confirms that earlier approaches to EE gave a narrow conception of the environment.

The following definition was proposed by Huckle (1991).

> *Education for the environment should be a shared speculation with pupils on those forms of technology and social organisation which can enable people to live in harmony with one another and with the natural world.*

In this definition the role of education is clearly defined, since the author views it from an educational perspective.

Palmer and Neal (1994) highlight the importance of EE where its ultimate goal is that of sustainability for future generations and the aim of producing well informed environmentally active adults who will in turn, be responsible for caring and creating a responsible attitude towards the environment. The following international events took place and supported EE on a global level geared towards an educational direction (Reddy, 2008).

2.6 INTERNATIONAL EVENTS IN SUPPORT OF ENVIRONMENTAL EDUCATION

These events took place since the 1970's and were the first recorded events to address environmental issues:

- In 1972, the United Nations Conference on the Human Environment was held in Stockholm.
- During 1975, the First International workshop on EE in Belgrade, Yugoslavia, took place.
- In 1977, the First Intergovernmental Conference on EE was hosted in Tbilisi, USSR. This led to the development of 12 principles, also known as the Tbilisi Principles of EE. These three events were part of the UNESCO/UNEP International Environmental Education Programme of the 1970's, of which the last two produced notable statements of aims and guiding principles for EE. The Belgrade Charter became an influential policy statement (Naidoo, Kruger and Brookes, 1990, 13).
- During the 1980's, the World Conservation Strategy called for the conservation and sustainable use of life support systems, biodiversity and renewable resources.
- In 1983, the Brandt Commission Report focused on the relationship between rich and poor and the need for a fairer distribution of the world's wealth (Brandt, 1983).
- In 1987, the International Conference on EE was held in Moscow. Tbilisi principles were affirmed as sound guidelines for the development of National

EE programmes. This was the most influential of the three also known as the Brundtland Report as described by Loubser (2014). The Brundtland Commission also coined the term Sustainable Development (SD) to meet the needs of both conservation and development as noted by Scheurder, Le Grange and Reddy (1999).

- In 1992, at the Rio Summit, the document Caring for the Earth: A Strategy For Sustainable Living was firmly embraced. This summit focused on the role of EE as an educational response to the environmental crises (Loubser, 2014). The idea of SD was promulgated here and a set of principles for sustainable living was developed and disseminated. These principles aimed at promoting SD and improving the capacity of people to address environment and development issues (Reddy, 2011, 14).
- In 2002 the Johannesburg Summit, A Decade of Education for Sustainable Development (DESD) took place. The role of education was emphasised as a response to issues of poverty, global inequalities and the need for SD in all societies as noted by Loubser (2014: 53).

These events and approaches confirm the perception of EE as being associated with the biophysical dimension of the environment. It is now accepted globally that the construct environment includes the interactions among the social, economic and political dimensions as well as the biophysical dimension (Le Grange and Reddy, 1997). In the following section the Tbilisi principles, objectives of EE and approaches to EE will be discussed as there is a clear relation on how to assist teachers when teaching environmental concepts.

A clear message on how to successfully integrate EE in the curriculum was sent out through the Tbilisi Principles (UNESC-UNEP, 1978).

2.6.1 Tbilisi Principles

EE should:

1. consider the environment in its totality-natural and built, technological and social (economic, political, cultural-historical, ethical, aesthetic);

2. be a continuous lifelong process, beginning at the preschool level and continuing through all formal and nonformal stages;
3. be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;
4. examine major environmental issues from local, national, regional, and international points of view, so that students receive insights into environmental conditions in other geographical areas;
5. focus on current and potential environmental situations while taking into account the historical perspective;
6. promote the value and necessity of local, national, and international cooperation in the prevention and solution of environmental problems;
7. explicitly consider environmental aspects in plans for development and growth;
8. enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences;
9. relate environmental sensitivity, knowledge, problem-solving skills, and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years;
10. help learners discover the symptoms and real causes of environmental problems;
11. emphasise the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills;
12. utilise diverse learning environments and a broad array of educational approaches to teaching, learning about and from the environment with due stress on practical activities and first-hand experience (UNESCO-UNEP, 1978).

UNESCO (1978, 26-7) developed objectives for those involved with EE so that they can pay attention to these objectives in order to act responsibly towards the environment.

2.6.2 Objectives of Environmental Education

Awareness:

To help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.

Knowledge:

To help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems.

Attitudes:

To help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.

Skills:

To help social groups and individuals acquire skills for identifying and solving environmental problems.

Participation:

To provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.

These objectives play an important role internationally though they have been subject to disapproval for not taking into account the continuous reconstruction of the human society and seems not likely to be advantageous to the diverse settings of the current state of the environment and environment problems. However, environmental problems were rather seen as a complex mix of socio-historical trends and events. In addition, the Guidelines suggest that EE be implemented through both the formal and informal curricula and in a cross-curricular manner as stated by Lee (2010).

Three approaches to EE provide guidelines on how to teach EE in schools.

2.6.3 APPROACHES TO ENVIRONMENTAL EDUCATION

Approaches to EE were allocated in the 1992 Guidelines on EE in Schools (hereafter Guidelines) (Curriculum Development Council 1992); these Guidelines stipulate that EE consist of three interrelated components, namely education about the environment, education in or with the environment, and education for the environment (Robottom, 1987a; Gough, 1989; Fien, 1993 and Lee, 1997). *In, about and for* the environment is

an approach developed by Lucas in (1972) in his doctoral dissertation, *Environmental Education: Conceptual issues and curriculum implications.*

2.6.3.1 Education About the Environment

This is known as the most common approach to EE. Education about the environment, according to Fien (1993: 15), focuses on:

> *Knowledge about natural systems and processes and the ecological, economic and political factors that influence decisions about how people use the environment.*

Activities "about" the environment could involve teaching and learning skills that enable learners to investigate the nature of the environment (Lucas, 1972). An example would be gathering information about living organisms in a river that is polluted and reporting back on how water pollution affects living organisms. The social aspect of this approach is often excluded, as the main focus is on the ecological aspect, even though the social aspect (humans) is responsible for the environmental problem, according to Fien (1993).

2.6.3.2 Education In and Through the Environment

Education in/through the environment focuses on active hands-on learning experiences as a method whereby learners can learn (Lucas, 1972). Fien (1995) expresses the following:

> *Education in or through the environment is an approach (whereby) learners' first-hand experience in the environment is used as a medium. The aims of this learner-centred approach to EE is to make reality, relevance and practical experience part of the learning process and to "equip" learners with feelings of appreciation for the environment through direct contact with the environment.*

An example would be learners investigating the interdependence of organisms inhabiting a small wetland. Learners explore the diversity of life within the wetland and look for connections between living things (birds, water plants, fish, etc.). Fien

(1993) further states that this approach will contribute to learners developing a caring attitude towards the environment.

2.6.3.3 Education For the Environment

Education for the environment involves programmes that "aim to assist the preservation or improvement of the environment for a particular purpose" and are designed to teach skills, as well as positive attitudes, values and behaviour towards the environment (Dube, 2012: 78). Lucas (1972: 106) claims that "since the goal of education for the environment is to produce a quality environment, citizens must be provided with the skills that are necessary to achieve this end." Fien (1993: 16) states:

> *Education for the environment has an open agenda of values education and social change. It attempts to involve learners in investigations related to solution of environmental issues and to encourage values of the new environmental paradigm. This therefore builds on about and in the environment to develop knowledge about basic concepts, strong feelings as well as skills.*

Education for the environment therefore strives to reproduce the social paradigm and its related flawed value system allied to human relationships with the environment, (Fien, 1993). Activities include learners being made aware, for example, of the effects of deforestation and the effect it has on living organisms, or case studies of environmental topics. Fien (1993) further argues that the first two approaches provide the knowledge and skills about the environment, but it is important to include the third approach which is, for the environment.

Swarts et al. (2015: 104) make links between EE and LO and states that, "with the focus on education in/through and for the environment, knowledge becomes rooted in practice through learners' experiences with everyday (real-life) social and environmental concerns." Singh (2011) further states that the emphasis on education in/through and for the environment is also directed towards meaning, with the emphasis on changing the learners' mind set to that of becoming mindful citizens.

In the next section the development of EE in South Africa will be discussed. The above-mentioned principles, objectives and approaches played an important role with the introduction of EE to the South African school curriculum.

2.7 EE IN SOUTH AFRICA

It is important to understand how EE was introduced in South Africa, pre- as well as post-1994.

2.7.1 EE pre-1994

Loubser (2014) reports that the Belgrade Charter of 1975 and the 1977 Tbilisi Principles played a major role of bringing EE to South Africa. Le Grange (2002) mentions that the adoption of environmental practices by the South African education system in the 1970's took place primarily in the subject of Natural Sciences (NS) as it dealt with ecological issues. Prior to this, soil erosion received attention and was termed "conservation education" until the late 1970's with a strong emphasis on the ecology and ecological processes (Loubser, 2014).

In the 1980's, confusion arose as outdoor education, which focused on out-of-doors activities, was often confused with EE. This concept declined in the 1980's as the political, social and economic dimension of EE became more prominent in national policies and practice (Loubser, 2014). Loubser (2014) described the development of EE in South Africa as a road hurdled with many obstacles.

Close to the end of Apartheid, EE was formally discussed for the first time in the White Paper for Environmental Education in 1989 as noted by Mosidi (1997). This can be regarded as the first attempt to include EE in the formal curriculum. This focused largely on conservation and ecology, but included some ideas from the Tbilisi declaration on EE.

2.7.2 EE post-1994

A White Paper on Education in 1995 is considered the beginning of EE in the formal school curriculum in South Africa as described in Loubser (2014). It embraced the Tbilisi Principles and the internationally accepted concept of EE at that time. The efforts of the Environment Education Policy Initiative (EEPI), established in 1992, brought obstacles surrounding the outlook of EE as a "neat and efficient management-

hierarchical approach or messy participatory and open-ended approach to policy development" (Loubser, 2014, 58). Lotz-Sisitka (2000) similarly describes the introduction of EE in the formal curriculum as an obstacle for teachers as implementation agents. The EEPI introduced the following four main policy options for introducing EE into the formal curriculum as noted in Loubser, (2014: 146).

EE as local, problem-solving curriculum action
EE as an integrated approach to EE (an environmental perspective within separate subjects)
EE as a separate subject
EE as a component within a subject

The Environment Education Curriculum Initiative (EECI) has resulted in EE being included in the formal education agenda and policies since 1995 and called for participation in the development of Curriculum 2005 (DoE, 1997) followed by the strengthening of this curriculum and the development of a revised National Curriculum Statement (DoE, 2002). As mentioned in chapter one, The Constitution of South Africa (Act 108, 1996) also highlighted the health of its citizens and environment. EE was included in the school curriculum with the introduction of OBE in in Curriculum 2005 in 1997.

Together with the 1995 White Paper on Education, the following are considered as the major events placing EE in the formal school curriculum over a 10-year period.

2.7.3 Major Events

Lotz-Sisitka (2002) kept a record of the major events that contributed to place EE in the formal curriculum in South Africa. She documented EE in South Africa over a 10-year period (1992-2002):

2.7.3.1 Environmental Education Policy Initiative (EEPI)

This initiative was the result of a strong network of expertise, a well-developed and supportive non-formal EE community and well-established community structures with the explicit goal of influencing policy-making processes. The highly representative group developed strong guidelines for formal EE policies, which were

part of policy discussions after 1994, to ensure that EE was included in policy documents.

2.7.3.2 Environmental Education Curriculum Initiative (EECI)

The EEPI renewed their focus on EE with role-players from the provincial government departments as well as EE practitioners in discussing the new school curriculum, known as Curriculum 2005 (DoE, 1997) and "strengthening and streamlining of this curriculum" (Loubser, 2014) along with the development of a revised National Curriculum Statement (DoE, 2002). The environment was defined as "a cross-curricular phase organiser in Curriculum 2005" as stated by Loubser (2014: 59).

2.7.3.3 National Environmental Education Project-General Education and Training (NEEP-GET)

This was a pilot project that focused on the professional development of teachers to enable them to enhance their skills for learning programme development in a context of rapid curriculum change in two provinces (De Vries, 2005: 13). According to De Vries (2005), this gave rise to the National Environmental Education Project (NEEP), which addressed the new focus and was developed to support the implementation of the environment as a curriculum concern in the GET phase.

In the next section EE will be discussed with specific reference to its inclusion in the South African formal school curriculum from OBE to the most recent, the CAPS curriculum.

2.8 ENVIRONMENTAL EDUCATION IN THE FORMAL CURRICULUM

EE became part of the formal curriculum in South Africa with the introduction of Curriculum 2005 in 1997. This was accomplished through two major participatory processes, namely, the Environmental Education Policy Initiative (EEPI) and the Environmental Education Curriculum Initiative (EECI) as indicated by Schudel, 2014). Subsequent to this there have been three curriculum changes of policy documents in South Africa since 1994 (Schudel, 2014), namely the 1997 Curriculum 2005 (C2005), the 2002 Revised National Curriculum Statement (RNCS) for General Education and Training together with the National Curriculum Statement (NCS) for

Further Education and Training and the 2011 Curriculum Assessment Policy Statement (CAPS). Since this study is linked to the CAPS period of curriculum only the ideas related to EE and CAPS will be highlighted in this section.

2.8.1 EE AND CAPS (2011)

As already stated, CAPS came as an amendment towards a more content referenced curriculum as noted by Pinnock (2011). With this specific view based on the content of subjects, this curriculum was implemented to bring relief from the challenges that faced the RNCS. The learning outcomes are no longer the dominating educational objective as they were in the RNCS as noted by Schudel (2014). With regards to the environment, CAPS focuses on the following principles:

> *Human rights, inclusivity, environmental and social justice: infusing the principles and practices of social and environmental justice and human rights as defined in the Constitution of the Republic of South Africa. The National Curriculum Statement Grades R-12 is sensitive to issues of diversity such as poverty, inequality, race, gender, language, age, disability and other factors (DoE, 2011b: 5).*

The National Curriculum Statement Grades R-12 aims to produce learners that are able to:

> *Use science and technology effectively and critically showing responsibility towards the environment and the health of others (DBE, 2011b, 5).*

Learning outcomes are now explicit in the general aims of the curriculum (critical outcome is now labelled a general aim in the new CAPS curriculum) as mentioned by Schudel (2014: 107). Schudel (2014: 100) however, argues that this aim reflects the original ‘critical and developmental outcomes’ that guide all qualifications, teaching and learning in South Africa, and this has been retained since it first developed in 1996 and applied to C2005. Schudel (2014: 100) further argues that in the CAPS curriculum, the environment is an integral part of the curriculum in the form of specific content knowledge in environmental concepts such as sustainability, environmental issues such as pollution and climate change and concepts such as

ecology and biodiversity which are foundational to understanding the biophysical dimensions of environmental issues and risks.

However, there are issues that could make the implementation of EE difficult. In the next section issues that could hamper EE implementation in CAPS, will be discussed.

2.9 ISSUES IMPLEMENTING ENVIRONMENTAL EDUCATION IN CAPS

This research study is related to the opinions, possibilities and issues in EE implementation in the CAPS policy document. Considering the teacher to be the most important agent in curriculum implementation, the teacher need to respond to frequent changes in the field of education as mentioned by De Jager (2014). This is easier said than done as teachers face many challenges when implementing EE. An issue investigated by Lee (2000) in his research showed that EE as a curriculum initiative has highlighted that teachers' reaction is a challenge to implementation itself. Lee (2000) found that teachers from different schools felt that EE promotion could hinder their normal teaching and that they might not have adequate knowledge about EE and ways of implementing the curriculum change.

Issues such as lack of time is evident when it comes to EE implementation in various subjects. Reddy (2000, 29) mentions that "it appeared as though the school timetable was difficult to bypass when attempting to include EE initiatives." In addition, Gough and Robottom (1993) in Reddy (2000: 289) argue that "it would be difficult for teachers to modify existing timetables in order to facilitate continued fieldwork required for some programmes developed." In addition, it was also noted by Marco (1998) that EE initiatives and implementation were strained by factors such as a lack of preparation time, lack of time in the school day and a lack of instructional materials. Marco (1998) also highlighted lack of involvement of school management that hampers the implementation of EE initiatives. Teachers in his research felt that principals should be cooperative in regard to EE initiatives.

Ontong and Le Grange (2014: 35) highlighted that since CAPS prescribes that all teachers should teach the same subject content at the same time, this could disconnect the school and its learners from local places, places which in many instances have been the sources of local communities' livelihoods. Ontong (2013) is of the opinion

that the hierarchical organisation of schools and teachers' timetables are not conducive to enacting place-based education, even when an environment in which the school is located is conducive to doing so.

Related EE studies as mentioned in chapter one, thus, confirm that teachers' lack of knowledge and related constraints may impact on the successful implementation of EE in various subjects (Tomlin and Froud, 1994; Ballantyne, 1999 and Walker, 1997). The subject LO, which forms part of the formal school curriculum, the CAPS policy document where EE pedagogy implementation will be investigated. As mentioned in chapter one, LO "addresses knowledge, values, attitudes and skills about the self, the environment, responsible citizenship, a healthy and productive life, social engagement, recreation and physical activity and career choices" as described by Prinsloo (2007: 156). Not much research has been done on EE in the subject LO and since it came into existence recently, this research study will address the gap in terms of presenting progress made with implementing EE in the LO CAPS curriculum.

2.10 SUBJECT LIFE ORIENTATION DEFINED

Where does LO fit into the formal South African curriculum? LO is exactly what it says: "being oriented in and towards life" as described by Gous and Roberts (2015: 3). The Department of Basic Education's Revised National Curriculum Statement Grades R-9 Policy states the following about LO:

> *Life Orientation guides and prepares learners for life and its possibilities and equips them for meaningful and successful living in a rapidly changing and transforming society. The focus of Life Orientation is the development of self-in-society. It promotes self-motivation and teaches learners how to apply goal-setting, problem-solving and decision-making strategies (DoE, 2011: 8).*

According to Gous and Roberts (2015: 4) these goals cannot be achieved without being aware of what and how we think. Our minds control not only what we think and feel, but what we do and decide. For this reason, attending to how the mind works is crucial for LO. Why was LO formed? This question will be answered in the next section.

2.10.1 The Formation of Life Orientation

As mentioned in chapter 1, transformation in the South African education system gave rise to LO in 1997 when Curriculum 2005 was introduced (DoE SA, 1997). Prinsloo (2007: 156) refers to the introduction of LO programmes as "the only hope of reaching children at risk, in a holistic way." LO enables learners to:

- *Understand and accept themselves as unique and worthwhile human beings*
- *Use skills and display attitudes and values that improve relationships in family, group and community*
- *Respect the rights of people to hold personal beliefs and values*
- *Demonstrate value and respect for human rights as reflected in Ubuntu and other similar philosophies*
- *Practise acquired life and decision-making skills*
- *Assess career and other opportunities and set goals that will enable them to make the best use of their potential and talents*
- *Demonstrate the values and attitudes necessary for a healthy and balanced lifestyle.*
- *Evaluate and participate in activities that demonstrate effective human movement and development (DoE SA, 1997b: 3).*

For the purpose of this thesis, the aims of LO in CAPS will be investigated.

2.10.2 Aims of Life Orientation in CAPS

- Guide learners to achieve their full physical, intellectual, personal, emotional and social potential;
- Develop learners' skills to respond to challenges and play an active and responsible role in the economy and society;
- Teach learners to exercise their constitutional rights and responsibilities and to respect the rights of others;
- Guide learners to make informed and responsible decisions about their health, environment, subject choices, further studies and careers; and

- Provide opportunities for learners to demonstrate an understanding of, and participate in activities that promote movement and physical development (DoE SA, 2011).

It is clear to see that LO lays the foundation for learners' future and "equip(s) them with the knowledge and skills to make informed decisions and choices and to take appropriate actions to live a meaningful and successful life" (DBE SA, 2011: 9; Theron and Dalzell, 2006: 399). One of the general aims of the National Curriculum Statement Grades R-12 therefore outlines and serves the purpose of "equipping learners, irrespective of their socio-economic background, race, gender, physical ability or intellectual ability, with the knowledge, skills and values necessary for self-fulfilment, and meaningful participation in society as citizens of a free country" (DoE, 2011: 4).

LO as a subject is peculiar to the South African education system and similar subjects exist in other countries, but with different names. In the next section LO in other countries will be explored.

2.11 INTERNATIONAL CONTEXT OF LIFE ORIENTATION

LO is taught in curriculums in other parts of the world and different education systems, however, use their own concepts to define subjects such as LO. The following table represents an overview of a few countries and the concepts used by their education department.

Table 2.1: Life Orientation in Other Curriculums

COUNTRY	**SUBJECT NAME**
United States of America	Citizenship Education (Lin, 2013).
Hong Kong	Liberal Studies (Deng, 2009)
Australia	Civics and Citizenship Education (Heggart, et al. 2018)
Canada	Guidance and Career Education (Ministry of Education, 2006)
Japan	Civics Education (Otsu, 2006)

For the purpose of this research, I drew on the work of Deng (2009) as the environment is included as a topic in Liberal Studies in the Hong Kong curriculum. I also chose to draw on Deng's work (2009) as the formation of Liberal Studies Hong Kong is different to the formation of Liberal Studies in South Africa.

2.11.1 Deng's Framework (2009)

Deng's (2009) framework for liberal studies in Hong Kong provides a useful structure for understanding LO in South Africa. The curriculum aims of liberal studies will be explored:

- To enable students to develop multiple perspectives on perennial and contemporary issues in different contexts (e.g. cultural, social, political and technological contexts).
- To help students become independent thinkers so that they can construct knowledge appropriate to changing personal and social circumstances
- To develop in students a range of skills for life-long learning, including critical thinking skills, problem-solving skills, communication skills and information technology skills (Fung and Howe, 2012: 103).

I drew upon the work of Deng to develop a heuristic for LO. In Hong Kong, liberal studies are "selected and organised with close reference to the cultural, social, and political contexts of Hong Kong" (Deng, 2009: 590). It was introduced in 1988 to address social and political issues in the local context (Morris and Chan, 1997a, b) and therefore content is selected and organised with close reference to the cultural, social, and political contexts of Hong Kong. It was designed to overcome the constraints that typified many secondary academic subjects by providing them with opportunities to explore a wide range of contemporary issues of social and personal significance from multiple perspectives and to develop problem-solving and critical thinking capacities (Curriculum Development Council [CDC] 2000) (in Deng, 2009) which at the same time aimed to liberate the minds of students.

Students were enabled to develop a broader knowledge base and a more solid foundation for whole-person development and life-long learning (Education Commission [EC] 2000 (in Deng, 2009), Education and Manpower Bureau [EMB]

2004) (in Deng, 2009) through this cross-curricular subject. “Students could therefore become informed, rational and responsible citizens of the local, national and global community” (Curriculum Development Council and Hong Kong Examination and Assessment Authority [CDC/HKEAA] 2007: 4) (in Deng, 2009).

The subject components of liberal studies consist of the following broad areas of concern:

> *Self and personal development*
> *Society and culture*
> *Science, technology and the environment (Deng, 2009: 590)*

These broad areas are further divided into six modules and include:

> *Personal development and interpersonal relationships*
> *Hong Kong today*
> *Modern China*
> *Globalisation*
> *Public health and*
> *Energy, technology and the environment (Deng, 2009: 590)*

Deng (2009: 586) argues that curriculum-making processes entailed in the formulation of a school subject is often not taken into account as it is these processes that determine and shape the nature and character of curriculum content and thereby teachers’ understanding of curriculum content (Deng, 2007b). A somewhat more open process was developed for Liberal Studies in Hong Kong as the eventual curriculum had some space for teacher input in the final enactment at classroom level.

2.11.2 Discussion of Subject Themes of Life Orientation

2.11.2.1 Development of the Self in Society

This theme is designed to help learners grow into their full potential as individuals, develop the skills needed to manage their own lives and it also teaches them how to be agents of the change in society. Living in a society with its many challenges, learners need to be directed through the mechanisms of developing into responsible

citizens, contributing positively to South African communities. To do this, the development of the self is an important step as described by Gous and Roberts (2015: 125). Under this theme, learners learn goal-setting skills, which include personal lifestyle choices. The "influence of media, environmental concept: environment, friends and peers, family, culture, religion and community on personal lifestyle choices are all included under this theme" as indicated in the DBE SA (2011: 20). The following environmental concept is covered under this theme:

- *Environment*

This theme is represented in term 1 (week 1-3), "Influence of the environment on personal lifestyle choices" (DBE SA, 2011: 18). The environment is:

> *The conditions in which people live. This should include fresh air, clean water, a clean home and a clean neighbourhood. If people are living in poverty, their personal lifestyle choices are affected because they have fewer opportunities available to them.*

The concept environment was part of the interview questions and I asked a specific question of what the concept environment is to get a general understanding of how teachers view the concept environment (see chapter 3).

2.12.2.2 Health, Social and Environmental Responsibility

Since 2011, health, social and environmental responsibility have replaced the topic citizenship education in previous LO policy statements (Swarts et al., 2015), under the Revised National Curriculum Statement (DBE SA, 2002). The requirements under this topic focus on communication, conflict management, problem-solving and decision-making as metacognitive tasks and strategies that teachers should use when teaching personal, social, and environmental health (Gous & Roberts, 2015). The following environmental concepts are covered in the LO CAPS policy document:

- *Sustainable Development (SD)*

SD is presented in term 3 (week 4-6). It is presented under:
Different types of volunteer organisations: contributions of community-based and

non-profitable organisations to social and environmental health and sustainable development. This definition was born out of the Brundtland Commission Report (Our Common Future) (October 1987).

> *Development (that) meets the needs of the present without compromising the ability of future generations to meet their own needs.*

This definition raises severe epistemological challenges concerning its interpretation, as argued by Bonnett (2002b), and brings forth the following questions as highlighted by Ontong and Le Grange (2014: 30):

- What constitutes needs?
- What should be sustained, at what level and for how long?

Le Grange (2012a) further regard sustainability as a frame of mind and not a policy, since the environmental crisis over the past decades has become worse than ever. The concept sustainable development and environmental health were presented during my classroom observation and therefore formed an important part of this study.

- *Environmental Health*

Presented under the different types of volunteer organisations (Mahlobo, et al., 2013: 154-5).

> *This includes the reduction of pollution, the protection of diversity and the assurance that people have access to water and sanitation. Relevant organisations include the World Nature Fund, and local HIV and AIDS organisations. These organisations monitor pollution, provide health training, negotiate for better laws and policies to protect people's health and wellbeing, as well as the wellbeing of our environment.*

- *Permaculture*

This theme is presented in term 3 (week 4-6). The following definition is listed in Christiaans, et. al, 2013: 134):

> *An approach to agriculture and human settlement to maintain a harmonious balance between humans and all living organisms.*

My study revolves intensively around the theme, health, social and environmental responsibility as it includes aims linked to the environment and environmental issues.

2.12.2.3 Constitutional Rights and Responsibilities

This topic deals with the learner's role as "a citizen living in a democratic and diverse society. The role comes with certain responsibilities and is underpinned by strong ethics and values" (Gous and Roberts, 2015: 171). It is important for learners to understand what a democracy is, since South Africa is a democracy, and also what values to uphold as a responsible citizen.

2.12.2.4 Physical Education

A subject linked to the "physique of the human body" **(**Gous and Roberts, 2015: 197), which includes participation in and learning of physical activities. According to Anderson (1989) it encourages psychomotor learning (skills such as movement, coordination and speed) in a play or movement-exploration setting to promote health and development of the human body (in Gous & Roberts, 2015: 197). The term physical activity is often confused with exercise as noted by Gous & Roberts (2015). Exercise, however, is a subcategory of physical activity that is planned, structured, repetitive and purposeful, whereas physical activity includes exercise, but also other activities that involve bodily movement, according to the World Health Organisation (WHO) (2004), in Gous & Roberts (2015: 197).

2.12.2.5 World of Work

This theme prepare learners for the world after their schooling career is over. The LO teacher should have the following knowledge and skills when teaching this subject as outlined by Gous and Roberts (2015: 234):

The nature of career-guidance

Career-guidance theories

The origins of career counselling

The career-guidance process.

The following topics are covered for grade 9 learners (DoE SA, 2011: 10):

Time management skills

Reading and writing for different purposes

Options available after completing Grade 9

Knowledge of the world of work
Career and subject choices
Study and career funding providers
Plan for own lifelong learning

The LO teacher thus has the responsibility of guiding learners through the process of choosing the right subjects for their future careers through this subject (Gous and Roberts, 2015).

I asked myself the following questions about LO in South Africa:

Is LO developed and constructed according to meet the needs of different cultures in South Africa?
Can learners apply the knowledge and perspectives they have developed from different subjects to make connections across different disciplines of knowledge?
What does CAPS say - how should LO be taught to learners?

I will answer the above questions by looking at the differences/ similarities between Liberal Studies in Hong Kong and LO in SA.

2.12.3 Differences/ Similarities between Liberal Studies in Hong Kong and Life Orientation in South Africa

- *Self and personal development vs Development of the self in society*

These two broad areas have similarities as it focuses on the development of skills and teaches learners important goal-setting skills on how to make personal lifestyle choices as individuals. The module listed under self and personal development, is personal development and interpersonal relationships (Deng, 2009: 590). The module listed under development of the self in society, include goal-setting skills (personal lifestyle choices) (DBE SA, 2011, 8). These two broad areas are parallel as it highlights the influence of media (technology), the environment, friends and peers, family, culture, religion and community on personal lifestyle choices (DBE SA, 2011: 8; Fung and Howe, 2012: 103).

- *Society and culture vs Constitutional Rights and responsibilities*

These two broad areas differ as it includes different modules that cover issues relevant to the context of each country. South Africa and Hong Kong are different in terms of its cultural, social, political and technological contexts. Society and culture includes Modern China, Hong Kong today and Globalisation. Under constitutional rights and responsibilities in LO, learners learn about the concept of constitutional values, cultural diversity in South Africa, religion and sport ethics as stated in DBE SA (2011: 8).

- *Science, technology and the environment vs Health, social and environmental responsibility*

Under this area, liberal studies cover modules such public health and energy, technology and the environment (Deng, 2009: 590) which has to do with energy indicators as well as sustainable development. Sustainable development is covered under this theme in LO (volunteerism) and it deals with decision-making and problem-solving skills (DBE SA, 2011: 20).

I can therefore argue and say that LO is developed and constructed according to meet the needs of different cultures in South Africa, whereas liberal studies were constructed to meet the needs of its culture. LO learners can apply their knowledge and perspectives from other subjects and make connections across disciplines as LO covers a few disciplines of knowledge, for example, world of work falls under the subject business economics. The role of the LO teacher on how to teach learners will be discussed in the next section.

2.13 THE ROLE OF THE LFE ORIENTATION TEACHER

“LO can be a fascinating subject when it is taught well by qualified teachers who have the appropriate background and love for the subject” as stated by Gous and Roberts (2015: 62). According to Rooth (2005), the epistemology and skills of the teachers who teach a subject determine its status. Rooth (2005) found a range of proficiencies, which made it difficult to determine the level of expertise for LO teachers. Although some indicated that they were qualified to teach it, there were different interpretations of what qualified means (Van Deventer, 2009). With LO being a new subject within a

curriculum in rapid transition, it is unrealistic to expect thoroughly trained and experienced LO teachers in all schools as argued by Prinsloo (2007). Prinsloo (2007) identifies various prerequisites for LO teachers:

- *Knowledge of subject-matter*
- *Life experience*
- *Interpersonal competence*
- *Skills in intercultural communication*
- *Conflict management*

Shulman (1987) on the other hand, highlights subject-matter knowledge as the most important characteristic and argues that teachers need to have three kinds of subject-matter knowledge: content knowledge, pedagogical content knowledge and curricular knowledge.

- Content knowledge includes knowledge of the substantive and syntactic structures of the academic discipline terms borrowed from Schwab (1964).
- Pedagogical content knowledge and
- Curricular knowledge enables the teacher to transform the content knowledge he or she possesses into ‘forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by students” (Shulman, 1987: 15).

Challenges could be faced by LO teachers if they want to execute their subject-matter knowledge when teaching learners. I therefore argue not only is the correct qualification important, but he or she should also be a people person in order to execute content, pedagogical content and curricular knowledge. To teach environmental concepts in LO, teachers need foundational knowledge in Biological and Environmental Sciences (Gous et al., 2015).

2.14 ENVIRONMENT EDUCATION IN LIFE ORIENTATION

As a compulsory subject for grade 9 learners in the CAPS document, LO is central to the holistic development of learners. The health of the environment as a whole is crucially important for the survival of future generations. Swarts et al. (2015: 100) contend that, if teachers want to successfully present themes relating to social and

environmental responsibility, it is important that EE should be considered in all teaching and learning activities. EE issues and concerns in LO are the perfect match to teach about the environment since the CAPS policy document requires all learning activities to have a "contextual focus" (DBE SA, 2011: 4) which can be linked with EE curricula, which are "contextual bound" (Ferreira, 2013: 263). The way teachers teach EE issues and concerns within the LO could impact on implementation of the environmental themes for LO.

This thesis will therefore focus on the implementation of an environmental approach in LO that is linked to teachers' understanding of the curriculum imperatives and the content/subject matter knowledge required. EE in LO is also important because the teaching of social and environmental responsibilities to grade 9 learners could result in them either acting responsibly or irresponsibly towards the environment. This corresponds with Erickson's (2001) theory of psychosocial development of the senior learner in which he maintains that, up to this stage, development mostly depends upon what is done to the individual.

2.15 ISSUES IN IMPLEMENTING ENVIRONMENTAL CONCEPTS IN LIFE ORIENTATION

As mentioned in chapter one and earlier in this chapter, the implementation of curriculum content brings about many challenges and LO as a subject does not stand in isolation when it comes to challenges. LO is not well received by teachers who are given the responsibility of teaching it. Jacobs (2011) revealed that learners' interest in LO is dampened by the teacher's attitude towards this fundamental (compulsory) subject. The findings of Rooth (2005), Christiaans (2006) and Van Deventer (2009), provided evidence that includes a lack of appropriate epistemology and skills, which prevents teachers from successfully teaching curriculum content in LO. Van Deventer (2009: 128) mentions "management capacity and scarcity of resources" as challenges that also hinder effective policy implementation in South Africa.

In addition, Swarts et al. (2015: 102) are of the opinion that integrating EE with LO will be difficult, for the following four reasons:

- CAPS introduces a content reference approach to social and environmental concerns as the foundation for learning;

- There are given time frames in which to cover the course material on social and environmental concerns;
- Adherence to departmental regulations regarding summative assessment is required (DBE SA, 2011, 33), which favours a teaching-to-the-test-or-examination paradigm; and
- The role of the LO teacher in developing learning activities is not clearly spelled out.

It is thus clear that, although LO in general appears to be promising in theory because it must prepare learners to cope with the complexities of real life (DBE SA, 2011: 9), the general opinion is that its effectiveness in practice seems to be doubtful (Jacobs, 2011: 212; Prinsloo, 2007: 155; Van Der Walt and De Klerk, 2006, 175). This study will highlight challenges regarding the implementation of environmental concepts, environment, sustainable development, environmental health and permaculture in grade 9 LO. There are other environmental concepts, but I chose these 4 as it is mentioned in the LO CAPS policy document and also presented by teachers in this study.

2.16 SUMMARY

LO has the potential to play an important role when teaching learners about the environment. Although all learning areas deal with aspects of environment, it is primarily LO that has the capacity to focus on intrinsic motivation and the affective aspects of learners' behaviour. How teachers cope with the implementation requirements of CAPS regarding environmental concepts, will be investigated. Investigating the receptivity of teachers responsible for implementing the requirements of CAPS makes this study necessary in order to provide feedback and highlight challenges currently experienced by teachers. How teachers interpret and understand curriculum content will be assessed.

Many people do not view sustainable living as a social problem, but the world's environmental predicament is caused largely by human actions accompanied by thoughts, feelings, attitudes, and values. Neoanalytic, behavioural, social, and cognitive psychological approaches may have the necessary insights to promote environmentally relevant behaviour as highlighted by Winter (2000).

It is clear that the implementation of new curriculum content and its attendant requirements is not an easy process for teachers as in most instances they lack the capacity and knowledge to implement effectively. Teachers' knowledge, views and experiences could influence the way they interpret the construction of new understandings.

In the next chapter, the research methodology is discussed along with how the data was collected and analysed for this study.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

In the previous chapter, the literature relevant to the study was reviewed. Curriculum implementation, EE implementation in the subject LO formed the cornerstone for the literature reviewed. This chapter presents the research methodology used to achieve the main research question of this thesis.

3.1.1 Main Research Question

> *How are teachers implementing environmental concepts in the LO CAPS curriculum in grade 9 in the Western Cape?*

3.1.2 Sub-questions

1. *How do grade 9 teachers understand the required implementation of environmental concepts in LO?*
2. *What possibilities do grade 9 teachers envisage for implementing environmental concepts in LO?*
3. *What challenges, if any, do grade 9 teachers face when implementing environmental concepts and how can teachers overcome them?*

According to Kallet (2004), the methodology part of a research paper answers two main questions: “How was the data collected or generated? And, how was it analysed?” This chapter therefore describes in depth the methods and techniques used to address the research problem. Mouton (2001) describes a research problem as implicitly or explicitly embodying a research question.

The following aspects formed the backbone of this chapter and will be discussed: qualitative research, research paradigm, research design, sample selection, ethics in research, data collection methods, transcribing of data, data analysis, authenticity of research findings and limitations. A qualitative approach was used in this study to focus on uncovering the meaning of a phenomenon for those involved as described by (Merriam, 2009).

3.2 QUALITATIVE RESEARCH

This approach was also beneficial in this thesis in order to understand situations from LO teachers' perspectives, how they interpret the meaning of EE implementation and to better comprehend the examined phenomena from a researcher's perspective. Qualitative research, however, is defined by various researchers according to their own understanding and these definitions relate to the same generic meaning of qualitative research. The definition of Van Maanen (1979) and Denzin and Lincoln (2003) were two definitions that captured my attention. Van Maanen's (1979) definition came at a time when qualitative research started to gain momentum as a social study research method. Van Maanen (1979: 520) states the following about qualitative research: Qualitative research is …

> *"… an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise comes to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world."*

The definition of Denzin and Lincoln (2003) differ directly from quantitative research:

> *The word qualitative suggests the attention on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied and the situational constraints that shape inquiry. They seek answers to questions that stress how social experience is created and given meaning. Claim that their work is done from within a value-free framework.*

These two definitions are understood to bring forth the reality as seen through the teachers' eyes. Qualitative research answers important questions (how and why) and it provided in-depth information of the situation as experienced by teachers responsible for teaching environmental concepts in LO to grade 9 learners in Western Cape high schools. It was therefore an interpretative approach with the main emphases:

- *To view the world with the eyes of the examinees (teachers), to describe and take into account the context*
- *To emphasise the process and not only the final results to be flexible and develop the concepts and theories as outcomes of the research process (Devetak et al. (2010: 78), who cite Bryman (2004).*

Qualitative reasoning (Connole, 1993) therefore proceeds from a general law to specific examples. Since qualitative research is complex in nature, it is important to understand how it works by looking at some of its characteristics.

3.2.1 Characteristics

Qualitative research is "an effort to understand situations in their uniqueness as part of a particular context and the interactions there. This understanding is an end in itself, so that it is not attempting to predict what may happen in the future necessarily, but to understand the nature of that setting" (Patton,1985: 1). Understanding a particular phenomenon and its meaning from "insider's perspective" (Merriam, 2009: 14) is key in qualitative research.

The researcher is seen as the "primary instrument" or measurement tool in qualitative research for data collection and analysis. The human instrument, which is able to be immediately responsive and adaptive, would seem to be the ideal means of collecting and analysing data (Merriam, 2009: 15).

The process is "inductive" because the researcher gathers data to "build concepts, hypotheses, or theories rather than deductively testing hypotheses" as in quantitative research. Theories and concepts were therefore built from the information from interviews with teachers, document analysis, classroom observations as well as artifacts, thus "working from the particular to the general" (Merriam, 2009, 15-6).

"Words and images" (Creswell, 2002: 58) rather than numbers are used to convey what the researcher has learned about a phenomenon. Descriptions of the context, the participants involved, and the activities of interest are important here. In addition, data in the form of quotes from documents, field notes, and participant interviews, excerpts from videotapes, electronic communication, or a combination of these are always

included in support of the findings of the study. These quotes and excerpts contribute to the descriptive nature of qualitative research (Merriam, 2009).

3.2.2 Role of Researcher

In this thesis the role I served was an outsider's role. I carried out various actions that included primarily data collection, data analysis, interpretation and discussion. While I was the player in the process, I relied on literature for interpreting and discussing the data. My role as outsider shaped my approach in interpreting and discussing the data. I was continuously aware of my 'active and interventive' character in the research process as described by Lotz and Raven (2004: 72). Being 'transparent' about my position as a former LO teacher, contributed to the 'credibility' and 'conformability' of this study as noted by Rule and John (2011). McMillan and Schumacher (2010) further state that qualitative research is based on the constructivist paradigm, which assumes that multiple realities are socially constructed through individual and collective perceptions or views of the same situation. Two concepts were used interchangeably in this thesis, that is, constructive and interpretive, since the two are synonymous with each other. A discussion on the research methodology and design will follow:

A qualitative research approach was chosen because it was most relevant for this study, since it is interpretive in nature (Merriam, 2009), and provided the best tool in understanding and analysing teachers' perspectives on the implementation of environmental concepts in LO in Grade 9.

3.3 RESEARCH PARADIGM

The concept paradigm was introduced by Kuhn in the 1970's (Loubser, 2014). According to Loubser, 2014, 67) "the word paradigm comes from the Greek word 'paradeigma', meaning pattern." Our lives today are shaped by frameworks or schemes that guide our thinking processes of how we make sense of the world we live in. These frameworks or schemes are called "paradigms, which refer to one's philosophical position" as noted by Loubser (2014: 67). It is notable that there are different perspectives and understandings on how to define a paradigm and this depends on specific viewpoints. Babbie (2007: 32) defines a paradigm as a "model or framework for observation and understanding, which shapes both what we see and

how we understand it." Patton (1975) describes a paradigm as "a world view, a general perspective, a way of breaking down the complexity of the real world." This relates to Rule & John (2011: ix) defining a paradigm as a "broad orientation to knowledge and reality." Guba and Lincoln (1994) highlighted the importance of identifying the paradigm with which research is conceived and carried out and defined paradigms through their ontology (what is the form and nature of reality, and, therefore, what is there that can be know about it?), epistemology (what is the nature of the relationship between the knower or would-be knower and what can be known?) and methodology (how can the inquirer (would-be knower) go about finding out whatever he or she believes can be known?). Van den Aardweg and Van den Aardweg (in Loubser 2014: 67), distinguished a paradigm from a theory and state that "a paradigm is more general and inclusive than a theory."

In this thesis, a single perspective was relevant to to be "fully exploited and to fit into the existing system of ideas" (Loubser, 2014: 68). The main methodological approaches to inquiry includes empiricist, interpretivist, critical as well as deconstructive/
poststructural (Connole, 1993: 22-3). It is important to always be aware of other methodological orientations when working in a specific paradigm. Table 3.1 gives a brief overview of the interpretive approach that defines the nature of enquiry along three dimensions.

Table 3.1: Overview of Interpretive Approach

	Interpretive
Ontology	History, literary and existential studies in which the subjective understanding of subjects is significant. Multiple realties exist and include multiple methods for understanding.
Epistemology	Knowledge is dependent on discovery. Knowledge has to be interpreted in terms of values it represents.
Methodology	Through the social, linguistic and cognitive skills of the researcher.

(Connole, 1993, 22-23)

3.3.1 Interpretive Paradigm

In social sciences it is important for examining the assumptions on which a research activity is based. This research study was guided by an interpretive paradigm developed inductively "relying on teachers' perspectives of the situation as it is" (Creswell, 2003: 9). This paradigm developed out of hermeneutics (Connole,1993) that focused on the interpretation of biblical texts. It gained momentum at the beginning of the twentieth century when Max Weber applied it to human action and made a distinction away from the natural science (Connole, 1993). Phillips (1987); Carr and Kemmis (1986) and Morgan (1983) in Connole (1993, 19) argue that human actions have reasons in which actions occur within a structure of social rules that have meaning for both actor and observer. Meanings are formulated and shared through language and other forms of symbolism are negotiated. Carr and Kemmis (1986) highlight the importance of interpretivism in the human sciences in social sciences in recent times.

The interpretive paradigm shaped my approach since I was interested in understanding how LO teachers interpret the LO CAPS curriculum by focusing this thesis on their subjective views, knowledge and experiences of implementing environmental concepts in grade 9. In the human sciences, "understanding is a method of studying humanity through an empathic identification with the other, a grasping of their subjective experience" (Giddens, 1976: 55). Terre Blanche et al. (2006: 7) acknowledge this and highlight the interpretive approach as explaining subjective reasons and meanings of social action. Connole (1993: 19) states, "we no longer speak of human behaviour but rather of human action". The reality to be studied therefore consisted of teachers' "subjective experiences of the external world, resulting in an intersubjective approach or interactional epistemological stance towards that reality" (Terre Blanche et al. 2006: 7) by using methodologies such as interviewing and observations in relations to document analysis and artifacts that rely on the subjective relationship between me and teachers.

Since teaching is a personal social activity, the practice of teaching means understanding specific cases and unique situations (Tiri, Husu and Kansamen, 1999, 911-12). My task was to focus on the following situations as described by Connole (1993, 20):

- *To understand the situation as it is by giving definition to the situation is the primary focus.*
- *Detaching from the situation but active involvement in the process of negotiated meaning using social skills resulting in human action/communication.*
- *Identifying patterns of meaning that emerge.*

My interpretation therefore "was not separated from my own background, contexts and prior understandings" as indicated by (Creswell, 2009: 176) but rather as multiple views built on "multiple realities" as argued by Connole (1993: 22). Opinions were developed and stated in in terms of the above perspectives in the study. Understanding in this study was to investigate current practices of teachers and to find new ways and methods to improve current methods of teaching environmental concepts in LO to grade 9 learners. As mentioned before, I was aware of the potential for bias (my own) as a former grade 9 LO teacher but made all attempts to avoid any personal judgments of the data developed in this research process.

3.4 RESEARCH DESIGN

Creswell (1998: 2) defines design as "the entire process of research from conceptualising a problem to writing a narrative". Babbie and Mouton (1998: 72) affirms to this and argues that design addresses the planning of scientific inquiry – designing a strategy of finding out something. The qualitative design used in this study is case study research.

3.4.1 Case Study Research

I chose a case study since case study methodology accentuates "context-dependent knowledge" (Lotz-Sisitka and Raven (2004: 67). Modern case study research has its origins in anthropology, sociology and psychology. With the evolution of qualitative research, case study research received attention from a methodological perspective. The 1960's and 1970's focused mainly on experimental designs and statistical methods, but by the 1980's researchers such as Stake (1988), Yin (1984) and Merriam (1988) were writing about case study research as a methodology in qualitative research. Merriam (2009: 39) states that case study research has proven particularly

useful for studying educational innovations, for evaluating programmes, and informing policy.

3.4.2 Case Study Characteristics

Rule and John (2011: 7) point out the following strengths of using case study research:

- *Depth*

It focuses on complex relations within the case and the wider context around the case as it affects the case making it intensive rather than extensive.

- *Flexible*

It is flexible in terms of a variety of research methods, both for data collection and analysis.

- *Versatility*

Can be used with other research approaches.

- *Manageability*

Since it focuses only on one singular problem, it is easy to manage in a situation facing constraints of time and resources.

3.4.3 Case Study Defined

To define a case study, the historical meaning of the two words 'case' and 'study' first needs some clarity. Rule (2011: 3-4) says the following about these two words: *'Case'* comes from the Latin word casus, which means fall, chance, occasion, misfortune meaning that a case is a specific happening. The word *'study'* is both a noun and a verb, an investigation into or of something. It is derived from the Latin word 'studere', meaning eager or diligent to study.

Adelman et. al. (1980) in Lotz-Sisitka & Raven (2004: 71) talks about case study as a 'step to action'. Yin (1989), known as one the proponents of educational case study research, describes it as a flexible form of inquiry best suited for studying a particular phenomenon within its natural context, particularly, when the "boundaries between phenomenon and context are not clearly defined" (Yin, 1994: 13). Creswell (2008) similarly talks about a case study as "an in-depth exploration of a bounded system." McMillan and Schumacher (2010: 344) go further and argue that "being bounded means being unique according to place, time, and participant characteristics".

McMillan and Schumacher (2010: 344) refer to a case study as an "examination of a single entity". Rule (2011: 4) contends that a case study is therefore a systematic and in-depth investigation of a particular instance in its context in order to generate knowledge.

3.4.4 Case Study Approaches

Bassey (1999: 92), however, highlights three different types of case studies:

- *Theory-seeking and theory-testing case studies:*
  Yin (1993) similarly talks about instrumental case studies.
- *Storytelling and picture-drawing case studies.*
  Yin (1993) refers to it as intrinsic case studies whereas Stake (1995) uses the concept descriptive case studies.
- *Evaluation case studies:*
  Bassey argues that the latter are not necessarily theory-generating, but they do draw on theoretical perspectives as described in Lotz-Sisitka and Raven (2004: 81).

The theory-seeking (Bassey, 1999) or instrument case study (Yin, 1993) was applicable to this research study as it provided the researcher with "insight into a specific theme or issue" as noted by McMillan and Schumacher (2010: 345). It focused on the in-depth understanding and perspectives on the implementation of environmental concepts in grade 9 LO in the current curriculum, CAPS. A nested case approach to case study research was developed (Lotz-Sisitka and Raven (2004).

3.4.5 Nested Case Approach

Lotz-Sisitka and Raven (2004: 72) defines a nested case as follows:

> *"An approach involving the situating of a range of various case studies within a broader case".*

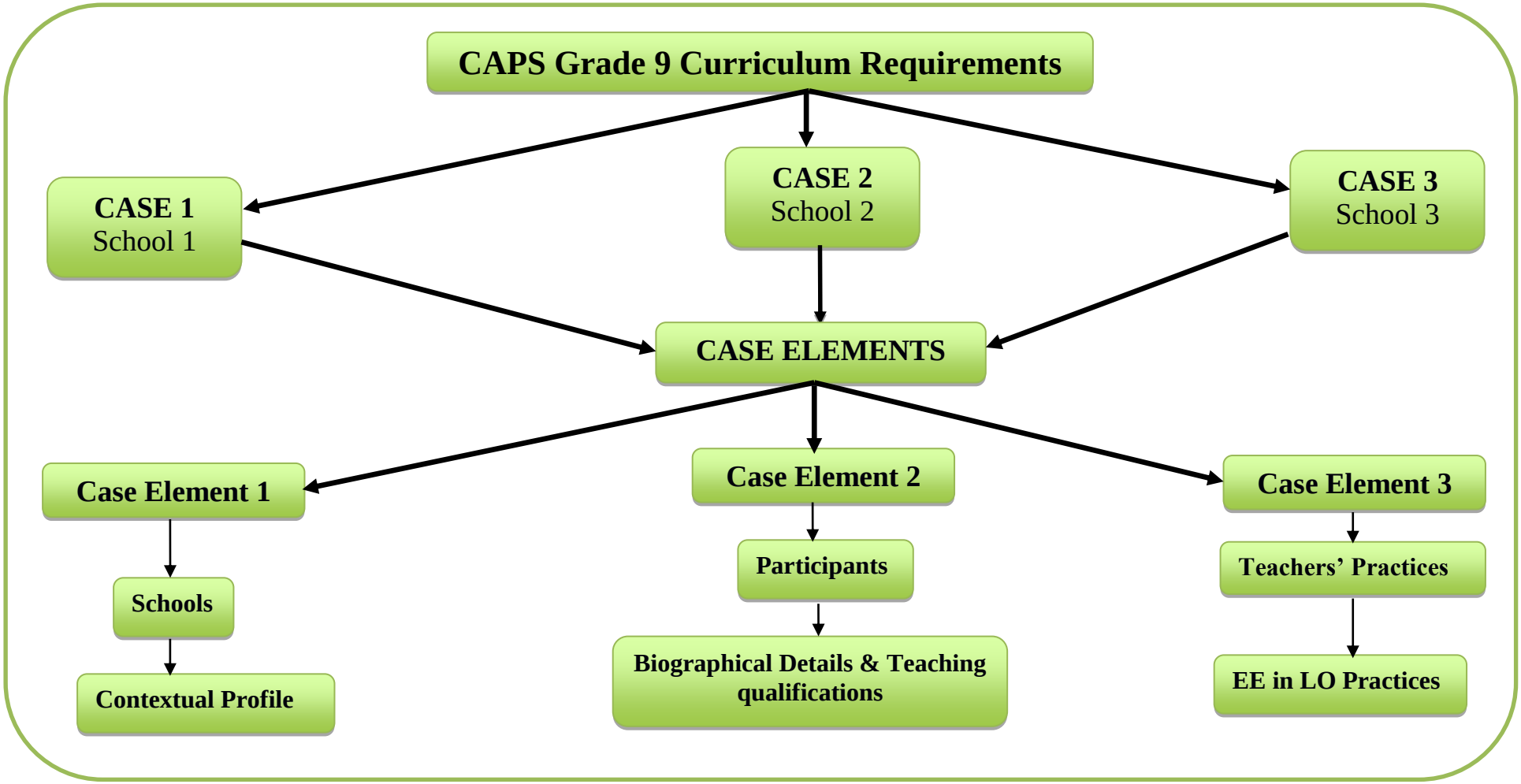
Each school presented a case nested within the broader case (the implementation of environmental concepts in LOCAPS for grade 9). The following table shows the case elements that formed part of the nested case in this research study:

Table 3.2: Case Elements in the Nested Case

Schools	
Contextual profile	Case element 1
Participants	
Biographical details and teaching qualifications	Case element 2
Teachers' practices	
EE in LO practices	Case element 3

Each teacher's perspectives within the case contained an element of in-depth narrative (Lotz-Sisitka, 2004: 72) on how they implement environmental concepts in LO in grade 9 and their perspectives formed part of the "broader and collective process" (Lotz-Sisitka and Raven, 2004: 79) in the field of EE. Sayer (2000: 20) refers to this as an 'intensive approach' to research that is 'essentially concerned with what makes things happen in specific cases'. Their understandings were interpreted and analysed to answer the research questions and Sayer (2000: 20) refers to this process as understanding this "is … a matter of interpretation … [and] … to interpret what actors mean, we have to relate their discourse to its referents and contexts." I therefore selected and used different methods and techniques in the different situations in order to probe the different questions that have been addressed. A diagrammatic presentation of the nested case will follow with case studies within the broader case.

Figure 3.1: Nested Case Approach



Adapted from Lotz-Sisitka and Raven (2004)

The above diagram outlines the nested case study approach used in this study. The CAPS policy document is the document used by teachers to implement environmental concepts in LO. Each school represents a case and the arrows indicate the interrelatedness of each case (school) as teachers within each case have to implement environmental concepts in grade 9. Three case elements are present; that is, contextual profile of schools, teachers' biographical details ad qualifications and teachers' practices of EE in LO. However, the research study had the following limitations.

3.5 SAMPLE SELECTION

3.5.1 Sampling Method

De Vos et al, (2007: 203) describe sampling as "taking a portion of a population and considering it representative of that population". A small sample was selected in this research study as the aim in qualitative studies is to identify information-rich cases or participants as stated by Hardon, Hodgkin and Fresle (2004: 57). Marshall (1996: 522) argues that selecting a sample is an important step in any research study since studying whole populations is rarely practical, efficient or ethical. The target population used in this thesis consisted of four grade 9 LO teachers from three high schools in the Western Cape.

The most appropriate non-probabilistic sampling method (Merriam, 2009: 77) used in qualitative research and most relevant for this thesis, was purposive (Chein, 1981) or purposeful (Patton, 2002) sampling. Babbie (2007: 184) refers to it as "judgmental sampling". Marshall (1996: 523) is of the opinion that using judgmental sampling enables the researcher to actively select the most productive sample to answer the research question. This is in agreement with what Patton (1990) states, namely that it involves selecting information-rich cases for study in depth.
Babbie (2007, 184) defines purposive sampling as:

> *"a type of nonprobability sampling in which the units to be observed are selected on the basis of the researcher's judgment about which ones will be the most useful or representative".*

Babbie and Mouton (2001: 166) state that it is sometimes appropriate to select a sample on the basis of the researcher's own knowledge of the population, its

elements, and the nature of the research aims, in short, based on the researcher's judgement and the purpose of the study. Sampling in the interpretive paradigm is often purposeful, directed at certain inclusive criteria, rather than random (Babbie and Mouton (2001: 288). Patton (2002: 230) confirms the following regarding purposeful sampling, "in selecting a case, the specific information relevant to the study has to be an 'information-rich' case which lies in the 'logic and power' of purposeful sampling". Purposive sampling also has the advantages of lower cost and time burden, as well as ease of administration, which assures high participation rate. Detailed information of the sample with regard to biographical details and qualification will be given in chapter 4. The following sampling methods emerged during the research study.

3.5.2 Emergent Sampling Methods

3.5.2.1 Theory or Concept Sampling

Theoretical sampling is the process of data collection for generating theory whereby "the researcher jointly collects, codes and analyses the data and decides what data to collect next and where to find them, in order to develop a theory as it emerges (Glaser and Strauss" (1967: 45). Grade 9 LO teachers were sampled to help generate or discover a theory or specific concept within the theory. A clear understanding of the concept or theory emerged during the research. Grade 9 LO teachers assisted the me to generate a theory on how to implement environmental concepts successfully in LO in grade 9.

3.5.2.2 Homogeneous Sampling

Through the use of this method, I identified the characteristics and found individuals or schools that possess them. Teachers were sampled based on membership in a subgroup that has defining characteristics. LO is a subject taught in each grade in high schools in the Western Cape. I specifically chose to investigate grade 9 LO teachers in high schools because they belong to a common subgroup within schools. The sampling method aided me in answering the research question.

Obtaining the relevant data took place through the following data collection methods.

3.6 DATA COLLECTION METHODS

Mertens (1998: 174) states that participant observation, interviews, and documented and recorded reviews are the main methods to collect data. Types of data collected played an important role in addressing the research questions. In this thesis, I made use of several methods for collecting empirical data that included the following: interviews, classroom observations, artifacts collection as well as document analysis. The following section includes a discussion of these methods that are universal, but unique to this thesis.

3.6.1 Interviews

Interviews take place on a daily basis in a variety of settings and the process involved the collection of specific information relevant to the questions being asked. In this thesis, interviews served the purpose of providing information to address the purpose of the study. According to Patton (2002: 341) it is important to find out what is in and on teachers' minds to obtain specific information. He further states that interviewing allows us to "enter into the other person's perspective" (340-1). Merriam (2009: 88) similarly, states that interviews are the best technique to use when conducting intensive case studies of a few selected individuals, which was applicable to this study. Using an interview, it is believed that in an interpersonal encounter people are more likely to disclose aspects of themselves, their thoughts, their feelings and values, than they would be in a less human situation. Advantages for using interviews in social research will now be explored.

3.6.1.1 Advantages of Interviews

Denscombe (2007: 202-3) lists some of the advantages of interviews:

Depth of information. Interviews produce data that are in-depth and detailed.

Insights. Valuable insights can be gained based on the depth of the information gathered.

Equipment. Only simple equipment and conversation skills are needed.

Informants' priorities. Data based on informants' priorities, opinions and ideas are produced.

Flexibility. Interviewing allows for a developing line of enquiry.

High response rate. Interviews are generally prearranged and scheduled and allow for a relatively high response rate.

Validity. Direct contact during the interview means that data can be checked for accuracy and relevance as they are collected.

Therapeutic. The personal element of this method allows respondents to enjoy the chance to talk about their ideas with a person whose purpose is to listen without being critical.

Semi-structured interviews were used to gain insight into teachers' understanding of the required implementation of environmental concepts in grade 9 LO.

3.6.1.2 Semi-structured Interviews

Semi-structured interviews were used as the main data collection method to elicit perspectives and perceptions of teachers related to the research questions. According to Bush (2002: 62), this method is often used by interpretive researchers and assumes greater diversity in both the design and use of the research instrument and in the nature of responses from participants, which enhances validity and limit the scope for reliability in qualitative research.

One-on-one interviews were conducted with individual teachers. Semi-structured questions allowed teachers to give open-ended responses, thus allowing in-depth information into teachers' understanding and perspectives on the research topic and to answer the question, "are teachers doing what they say they do?" Merriam (2009: 90) states that, in this type of interview, some of the questions are "flexibly worded with a mixture of more or less structured questions and neither the exact wording nor the order of the questions is determined ahead of time." The format of semi-structured interviews therefore allowed me to "respond to the situation at hand, to the emerging worldview of the teacher, and to new ideas on the topic" (Merriam, 2009: 90). One interview was conducted including a follow-up interview with each individual teacher as the unit of analysis.

3.6.1.3 Interview Schedule

Interview questions were developed according to the framework of questions proposed by Dillon (2009) and modified according to nested case study research. Interview questions consisted of questions related to teachers' perspectives on implementation of environmental concepts required by LO CAPS curriculum document for Grade 9 in high schools. The process therefore focused on teachers'

perspectives of promoting EE in LO.

3.6.1.4 Interview Process

Interviews were recorded using an audio recorder. All teachers were informed that the interview would be documented with a recording device. I obtained permission from all four teachers to use my recording device. The audio recorder allowed me to save each teacher's interview in folders (folder A - teacher 1, B - teacher 2, C - teacher 3 and D - teacher 4). It also allowed for playing back the interview to the interviewees during debriefing and it allowed me to transcribe each teacher's exact words accurately after the interview. The interviews were conducted in English and Afrikaans and tape-recorded and transcribed verbatim. Afrikaans transcripts were translated into English and discussed with the teachers during debriefing for verification. In total, eight recordings were obtained from the three high schools. Raw interview data were therefore transcribed into transcriptions and developed into themes through the process of thematic analysis, which will be discussed later in this chapter. An interview protocol form was designed, containing instructions to follow during the course of the interview, the questions to be asked, and space to take notes from the interviewee.

3.6.1.5 Interview Protocol

Probes were designed in the interview protocol and served as sub-questions under the important main questions. Probes allowed for a more detailed answer to the original questions asked (Babbie, 2007). Icebreakers were used to open the conversation and to make the interviewee feel at ease during the interview session. I started by asking the interviewee general questions. While I was listening to the interviewee, descriptive notes describing teachers' responses to the evolving nature of the interview were made.

3.6.1.6 Debriefing

Debriefing took place after the interview to "learn about teachers' experience of participation in this thesis and to ensure that any problem that arose during the interview can be addressed" (Babbie, 2007: 67). Teachers were thanked for their cooperation and participation in the interview. They were assured of the confidentiality of their responses and the potential for future interviews. All four

teachers were curious about the outcome of the research and I informed them that I would return at a later stage to discuss the outcome of the research. Raw interview data were transcribed into transcriptions and were then developed into themes through the process of thematic analysis. The following research method aided me to see if teachers do what they said they do. The observation process will now be discussed.

3.6.2 Observation Process

Babbie, (2007) highlights the important role the presence of observing plays as a field research method. Observation as described by (McMillan and Schumacher, 2010: 350) allowed me to, ”see and hear” what was occurring naturally in the research site. Observing in a natural setting allowed me to obtain an in-depth analysis and understanding of the pheonomenon being studied (McMillan and Schumacher, 2010). The role of observational research as described by Good (1988) is to describe what takes place in the classroom context in favour of depicting the difficulties teachers are exposed to when implementing the curriculum. The research study was based on systematic observation, to study teachers' interactions within the classroom (Denscombe, 2007, 206). I took on the role as an outsider referred to as “simple observation” by Babbie and Mouton (1998: 293) in the classroom setting as this choice of role was influenced by the nature of the setting and the participants.

Lessons of teachers in the sample were observed and teachers' methods, content and resources were recorded for analysis. These were viewed in terms of EE pedagogies. Eight observations took place within the classroom and each teacher was observed twice. I visited teachers in their classroom to observe their lessons when they taught environmental concepts in the subject LO to grade 9 learners. Observation of lessons were 40 minutes long as per school timetables.

Kelleher (1993: 126) highlights the following elements as advantages when observing and I used these elements as a guideline for observing accurately:

- *It forces the observer to familiarise with the subject*
- *It allows previously unnoticed or ignored aspects to be seen*
- *People's actions are probably more telling than their verbal accounts and observing these are valuable*

- *It is unobtrusive and, when obtrusive, the effect wears off in reasonable time*

An observation schedule was developed in order to guide the classroom observation process.

3.6.2.1 Observation Schedule

Denscombe (2007: 209) argues that the purpose of observation schedules is to minimise the variations that will arise from data based on individual perceptions of events and situations and its purpose is to provide a framework for observation that all observers will use, and that will enable them to:

- Be alert to the same activities
- Record data systematically and thoroughly
- Produce data that are consistent

Observation schedules (see appendix 9) were developed using the framework of Dillon (2009) to guide classroom observation of LO lessons linked to environmental concepts for grade 9 and contained important questions related to EE implementation in LO. It was designed to see how teachers teach environmental concepts in LO and if their actions were compatible with their words. Observing teachers allowed "information to be recorded as it occurred and studied teachers actual behaviour to see if they do what they said they do" (Creswell, 2008: 211).

3.6.2.2 Observation Protocol

An observation protocol (see appendix 8) was developed to assist in guiding the observation process. "It included a single page with a dividing line down the middle to separate descriptive notes (portraits of the participants, a reconstruction of dialogue, a description of the physical setting, accounts of particular events, or activities) from reflective notes (the researcher's personal thoughts" (Bogdan and Biklen, 1992: 121) as cited in Creswell (2009: 181-2). Creswell (2009: 182) advise to also include demographic information about the time, place and date of the field setting where the observation takes place. For each classroom observation, an observational protocol was designed and served as a guideline with the necessary information on how to observe effectively and accurately. It consisted of an

observational checklist, the time, description of lesson as well as reflective notes in the form of a timeline. Description of lesson and reflective notes were compared (a detail presentation in Chapter 4).

3.6.2.3 Observation Rubric

A classroom observation rubric (see appendix 10) was formulated and served the purpose of assessing teachers' commitment to the CAPS LO curriculum. It aided me and focused my attention to observe what the teacher was doing in the actual process. It consisted of four components of assessment related to teachers' perspectives to the curriculum imperatives of EE implementation in LO.

3.6.2.4 Observation Obstacles

I faced some obstacles before and during the observation. Some classes were cancelled due to exams, and I had to reschedule with teachers to conduct the initial observation within the classroom. Class periods were adapted according to the exam timetable which resulted in shorter class periods of about 40 - 45 minutes. While observing, there was a lack of classroom management. Learners did not pay attention and lack of discipline resulted in teachers struggling to maintain classroom management. The CAPS policy document allowed me to anlayse teachers' perspectives in relation with the curriculum requirements.

3.6.3 Documents

Document analysis allowed me to gain access about the context of the case being studied (Merriam, 1998). Analysing documents plays an important role in qualitative research studies as it can be used in the triangulation, "the combination of methodologies in the study of the same phenomenon" as described by Denzin (1970: 291). Denscombe (2007: 227) also states that government publications provide a documentary source of information and list the following advantages of documents:

- *Authoritative because it has credibility.*
- *Objective and impartial since it was produced by officials.*
- *Factual with hard facts around which there can be no ambiguity.*

Burgess (1982), cited in Merriam (1998), on the other hand, stresses the importance of determining the authenticity as well as accuracy of any document used in academic research. Merriam (1998: 122) highlights a list of questions researchers should ask when analysing documents for research purposes and this was taken into consideration in this study.

- *What is the history of the document?*
- *How did it come into my hands?*
- *What guarantee is there that it is what it pretends to be?*
- *Is the document complete, as originally constructed?*
- *Has it been tampered with or edited?*
- *If the document is genuine, under what circumstances and for what purposes was it produced?*
- *Who was/is the author?*
- *What was he trying to accomplish? For whom was the document intended?*
- *What were the maker's sources of information? Does the document represent an eyewitness account, a second-hand account, a reconstruction of an event long prior to writing an interpretation?*
- *What was or is the maker's bias?*
- *To what extent was the writer likely to want to tell the truth?*
- *Do other documents exist that might shed additional light on the same story, event, project, programme, context? If so, are they available, accessible? Who holds them?*

The official document that was analysed in this thesis was the CAPS Policy Document for LO Grade 7-9 (Senior Phase) (DBE SA, 2011). The CAPS policy document therefore provided the important steps teachers need to follow to implement environmental concepts in grade 9 LO. (SA, DBE, 2011: 22). During the process of document analysis, I made use of the process of content analysis to analyse the content in the CAPS policy document. Content analysis allowed me to see what aims are required and also to gauge the way teachers are dealing with the curriculum requirements to implement environmental concepts in LO in grade 9.

3.6.3.1 Content Analysis

Content analysis is a method that can be used to identify patterns across qualitative data and is sometimes treated as similar to thematic approaches (Wilkinson, 2000). It tends to focus at a more micro level, often providing (frequency) counts (Wilkinson, 2000), and the unit of analysis tends to be more than a word or phrase. Babbie (2007: 320) defines content analysis as "the study of recorded human communications and to answering the classic question of communications research: Who says what, to whom, why, how, and with what effect?" According to Merriam (2009: 205) content analysis refers to the process that involves the simultaneous coding of raw data and the construction of categories that capture relevant characteristics of the document's content. Content analysis, however, has been very quantitative in nature, but with its focus on the communication of meaning.

Palmquist (1993) and Keller (1995,) cited in Babbie and Mouton (1998: 492), divide content analysis into two parts, namely, conceptual analysis (also known as thematic analysis), and relational analysis. During the analysis process of this thesis, I made use of thematic analysis to analyse the data as it was the best applicable method for analysing the data. Dencombe (2007: 237) lists the following procedure when using content analysis:

- *Choose an appropriate sample of texts or images.*
- *Break the text down into smaller component units.*
- *Develop relevant categories for analysing the data.*
- *Code the units in line with the categories.*
- *Count the frequency with which these units occur.*
- *Analyse the text in terms of the frequency of the units and their relationship with other units that occur in the text.*

Denscombe argues (2007) argues that content analysis has the potential to disclose many hidden aspects of what is being communicated through written text and Gerbner et al. (1969); Krippendorf (2004) cited in Denscombe (2007: 237) supports this view by stating that "researchers do not have to base the analysis on what the author thought they were saying when the text contains more tangible evidence about its

message." The analysis of the above-mentioned data followed after the data was collected. Artifacts served as a written proof of teachers' commitment to the CAPS curriculum imperatives.

3.6.4 Artifacts

"Artifacts are tangible manifestations that describe people's experience, knowledge, actions, and values" (McMillan and Schumacher, 2010: 361). Two types of artifacts were analysed in this research paper. Firstly, written sources such as teachers' lesson plans, resources (textbooks and other materials) developed by teachers responsible for teaching LO in grade 9. "These documents describe functions and values and how various people define the organisation" (McMillan and Schumacher, 2010: 361). I analysed three textbooks used at the three schools. Examples of teachers' lesson plans are also included (see appendix 11 and 13). Evidence of learners' assessment tasks were also analysed (see appendix 14) as part of evidence on how teachers implement environmental concepts in LO.

Secondly, "objects are created symbols and tangible entities that reveal social processes, meanings and values" (McMillan and Schumacher, 2010: 362). In this case, posters were analysed as part of evidence of teachers' engagement with curriculum requirements for LO. Searching for ideas related to environment and environmental issues also formed part of the of the data collection method under artifacts. I also took photos as part of evidence for analysing teachers' engagement with curriculum requirements (see chapter 4 under emergent themes from artifact data). These were all analysed according to an artifact rubric (see appendix O) and helped me highlight important unique information as regards EE and LO in CAPS. An artifact rubric (see appendix 10) was also developed by me in terms of lesson plans, posters as well as resources (textbooks, materials and activities). Examples of artifacts (See chapter 4):

The following served as artifacts used in this research study and included teachers'

- Annual teaching plans
- Lesson preparation
- Class and personal timetables

- Assessment plans

Artifacts served as the written proof of teachers' commitment with regard to the CAPS Policy document. The above research methods formed the backbone of this research study. In the following section, transcribing of data will be discussed.

In ensuring safekeeping of data, I applied the following methods to prepare the raw data as noted by Babbie and Mouton (1998: 289):

- *Back-up copies were made of all original materials.*
- *All materials were collated and organised in a compatible format.*
- *All data were collated in such a way that allowed the researcher to add comments and notes at later stages in the research process.)*

3.7 TRANSCRIBING OF DATA

The data was transcribed by me. Data was transcribed word for word (verbatim). A coding scheme with operational definitions and examples from transcriptions was developed. The coding scheme was used, and data were "organised into chunks and segments to bring meaning to the information" (Rossman and Rallis, 1998: 171). An analytical framework for document analysis and observations was provided and finally an interpretation was made of all data in terms of literature reviewed for the study. Key concepts and words were used from within the document as indicators for environmental concepts and concerns by way of content analysis. Key actions and pedagogical methods were observed and analysed in terms of EE pedagogies documented in literature. In the following section thematic analysis as an analysis process will be discussed.

3.7.1 Thematic Analysis

In analysing themes, I made use of thematic analysis. Braun and Clarke (2006: 4) considers thematic analysis as the first qualitative method of analysis that researchers should learn, as it provides core skills that will be useful and states that it should be seen as a foundational method for qualitative analysis. This correlates to Boyatzis (1998), who characterises it not as a specific method, but as a tool to use across different methods. Babbie and Mouton (2001), on the other hand, refer to thematic an

anlysis as content analysis. A definition given by Braun and Clarke (2006) will be explored:

> *"It is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes your data set in (rich) detail."*

Thematic analysis was used for the reason above as the aim of this research study was to provide rich or detailed accounts of LO teachers' experiences in implementing environmental concepts and to interpret various aspects of the research topic as stated by Boyatzis (1998).

3.7.2 Defining a Theme

According to Braun and Clarke (2006: 10) a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set. An important question to address in terms of coding is what counts as a pattern/theme, or what size does a theme need to be? Furthermore, the 'keyness' of a theme is not necessarily dependent on quantifiable measures – but in terms of whether it captures something important in relation to the overall research question (Braun and Clarke, 2006). It should be borne in mind that analysis is a constant moving back and forth between the entire data set, the coded extracts of data that are analysed, and the analysis of the data produced. Organising data into themes started when I began to look for patterns of meaning and issues of potential interest in the data during data collection. The result was the reporting of the content and meaning of patterns (themes) in the data, where "themes are abstract constructs the researcher identifies before, during, and after analysis" (Ryan and Bernard, 2000: 780).

I followed six steps as presented by Braun and Clarke (2006: 15-23) when performing thematic analysis; these are not rules that should be followed, but serve as a useful guide that assisted me in answering the research questions.

3.7.3 Thematic Analysis Steps

Ely et al. (1997) contend that thematic analysis is a timeous process developing over time and should not be hurried. A discussion on thematic analysis steps as presented by Braun and Clarke (2006: 15-23).

Step 1: *Familiarising yourself with your data*

During this step I searched for meanings, patterns and made notes. This process prepared me for the formal coding process. I analysed the data obtained through interviews, observation and artifacts.

Transcription of verbal data

The transcription process allowed me to familiarise myself with the data, which is very important (Riessman, 1993). According to Bird (2005: 227) some researchers even argue it should be seen as "a key stage of data analysis within interpretative qualitative methodology", and recognised as an interpretative act, where meanings are created, rather than simply a mechanical process of putting spoken sounds on paper, similarly described by Lapadat and Lindsay (1999). Producing a transcript requires a rigorous and thorough 'orthographic transcript – a verbatim' account of all verbal and sometimes nonverbal, utterances.

Step 2: *Generating initial codes*

Production of initial codes took place during this step. The process of coding is part of analysis (Miles and Huberman, 1994), organising your data into meaningful groups (Tuckett, 2005).

Step 3: *Searching for themes*

This stage re-focused the analysis at the broader level of themes, rather than codes, involves sorting the different codes into potential themes, and collating all the relevant coded data extracts within the identified themes.

Step 4: *Reviewing themes*

During this stage, it will become evident that some candidate themes are not really themes, whereas others might collapse into each other. Other themes might need to be broken down into separate themes. Patton's (1990) dual criteria for judging categories

are worth considering here. Data within themes should cohere meaningfully, while there should be clear and identifiable distinctions between themes.

Step 5: *Defining and naming themes*
During this step I was able to 'define and refine' by identifying the essence of what each theme is about (as well as the themes overall) and determining what aspect of the data each theme captures. Identifying the content of the data extracts is important and for each individual theme, I wrote a detailed analysis.

Step 6: *Producing the report*
This involves the final analysis and writing-up of the report. The task of the write-up of thematic analysis was to tell the complicated story of your data in a way that presented the merit and validity of your analysis. The analysis provided a concise, coherent, logical, non- repetitive, and interesting account of the story the data tell - within and across themes.

3.9 DATA ANALYSIS

Miles and Hubermann (1994) and Lee (2010) describe the overall analytic process as an inductive, ongoing cyclical process in which categories and patterns emerged from the data and were later cross-checked. Rule and John (2011: 75), say the following question should be asked when the data is collected:

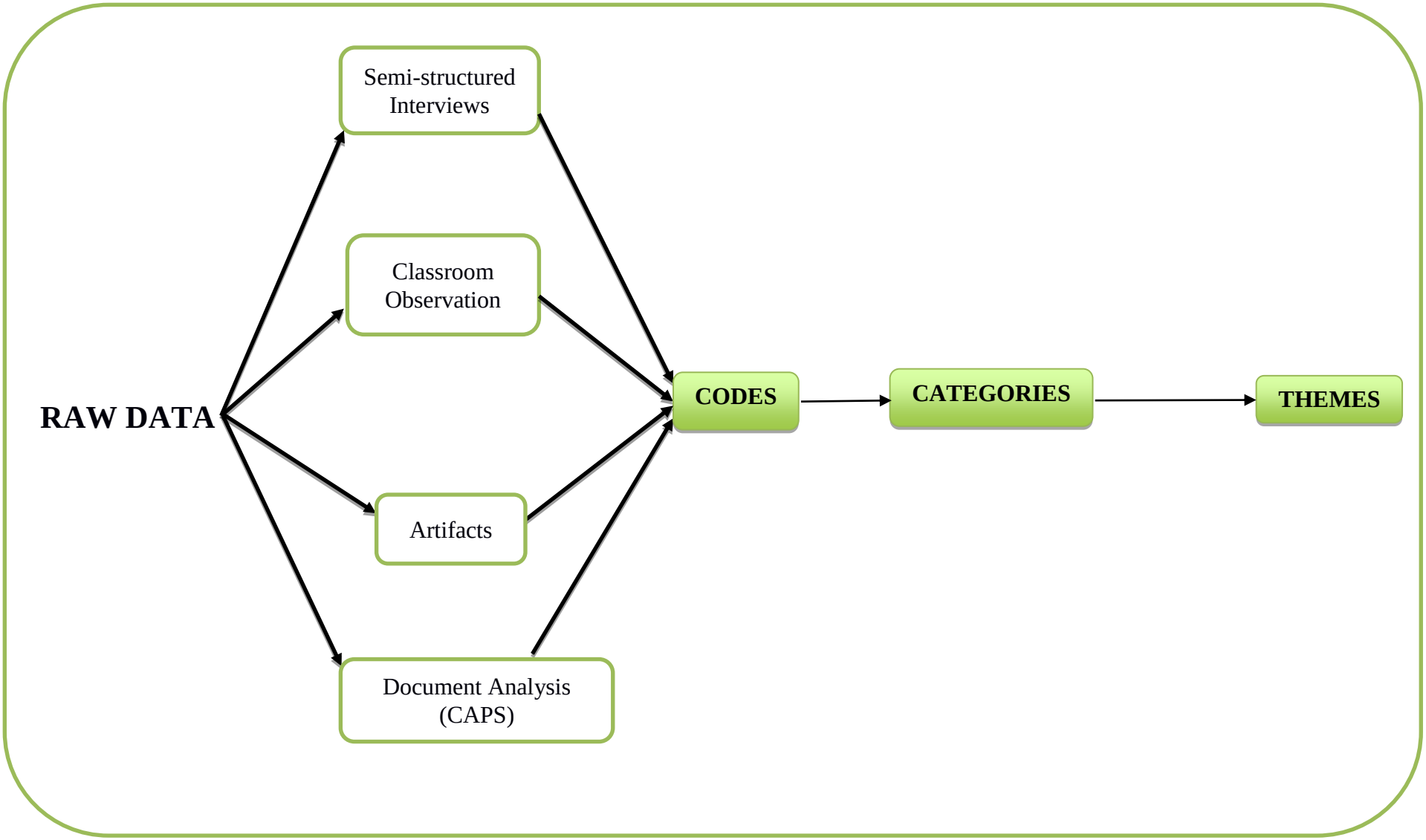
> *"What does the case mean?"*

A response to this question according to Rule and John (2011: 75) "requires interpreting the case". Data analysis and interpretation constitute a critical stage in the research process, which allowed me to "construct thick descriptions, to identify themes, to generate explanations of thought and action evident in the case, thereby theorising the case" as described by John and Rule (2011: 75). Interviews, observations, documents and artifacts data were analysed as part of the case and interpreted. A discussion on the data analysis steps will follow in the next section.

3.8.1 Data Analysis Steps

Four stages were evident in the research process as identified by Lichtman (2006) A diagrammatic presentation of the data analysis steps will follow.

Figure 3.2 Data Analysis Steps



Adapted from Lichtman (2006, 168)

Semi-structured interviews, classroom observation, artifacts and documents represented raw data collected in the research process. Interview data were gained by recording and transcripts were developed. Observation data were gained through observing teachers while they were teaching environmental concepts to grade 9 LO learners. Artifact data were gained through observing teachers in their classrooms. While observing teachers, I took photographs of posters containing EE- and LO-related information. I analysed teachers' lesson plans, their class and personal timetables, annual teaching plans as well as their assessment plans of LO grade 9. An analytical framework for document analysis and observations was provided and finally an interpretation was made of all data in terms of literature reviewed for the study. Key concepts and words were used from within the document as indicators for environmental concepts and concerns by way of content analysis. Key actions and pedagogical methods were observed and analysed in terms of EE pedagogies documented in literature. After gathering all through the above-mentioned, data were coded into categories.

A coding process was used and data was "organised into chunks and segments to bring meaning to the information" (Rossman and Rallis, 1998: 171). Coding as described by Rule and John (2011: 77) is a "process of choosing labels and assigning them to different parts in the data." It provided me the opportunity to get close to the data and develop categories into themes through the constant comparative method.

The constant comparative method involved four stages as described by Glaser and Strauss (1967: 105-13) and provided me with the necessary steps to:

- Comparing incidents applicable to each category (similar to conceptualisation specifying the nature and dimensions of the many concepts arising from the data
- Integrating categories and their properties (relationships among concepts)
- Delimiting the theory (as patterns of relationships among concepts become clearer, some concepts can be ignored)
- Writing theory (findings are put into words)

Interviews were used to collect data and it served as an important data source. Interview data was gained by recording and the transcripts were developed subsequently and analysed for themes. Themes were developed from the data through constant comparison, in which I "continually search for both supporting and contrary evidence about meaning of the category" (McMillan & Schumacher, 2010: 377). This brings us to thematic analysis. Data were analysed using thematic analysis, which is one of the two kinds of content analyses processes in qualitative research. Ethical clearance is an important factor in research to be taken into account. This is to ensure that this thesis was conducted in an ethical sound way.

3.9 ETHICS IN RESEARCH

Before I conducted this thesis, I had to consider various ethical principles in research. To conduct research in an ethically sound way enhances the quality of research and contributes to its trustworthiness as noted by Rule and John (2011). The "questions of access, power, harm, deception, secrecy and confidentiality are important issues I had to consider and resolve in the research context" (Burgess, 1989: 5). A definition of ethics (Burgess, 1989: 1).

> *"Relating to morals, treating of moral questions; morally correct, honourable . . . Set of principles of morals . . . Science of morals, moral principles, rules of conduct, whole field of moral science."*

3.6.1. Ethical Clearance

Application for ethical clearance was made to Stellenbosch University and permission was sought from the Western Cape Education Department to access schools to recruit participants (See appendix 1 and 2). Schools as well as grade 9 LO teachers were approached for permission to take part in this study. Obtaining the necessary permissions included sharing with potential participant the research goals, methods, expected outcomes, anticipated impacts of the research, and the rights and responsibilities of research participants (Statement on Ethics of the American Anthropological Association, 2012). Data dissemination was also discussed with participants and involved confidentiality, the extent to which the data can be reported back and the extent to which research reports can be used by policy makers and in educational practice as described by Burgess, (1989: 6). After ethical clearance was

obtained from the University and the Western Cape Education Department, I gained access to the schools.

3.9.2 Accessing Sites

A letter was formulated (See appendix 2) to inform possible schools of my research study. The letter was formulated on a Stellenbosch University letterhead. Appointments were made with some schools telephonically via the principal concerned. Other schools requested me to send an e-mail to the principal (see appendix 2). The people involved during accessing sites were the school secretary, principals, LO subject heads and grade 9 LO teachers. Some schools refused to participate in this research study, whereas others were willing to participate. The letter contained a request for permission and was handed over to the principal and teachers involved. I arranged with principals for a second meeting with grade 9 LO teachers.

Informed consent from teachers was a major consideration that had to be taken into account. A discussion on this element will follow.

3.9.3. Informed Consent

Burgess (1989: 6) describes "informed consent as the voluntary consent of the individual to participate in research" and therefore the individual should not be "harmed in any way necessary" (Diener and Crandall, 1978; Reiser et al. 1977). I obtained teachers' informed consent in order for them to provide relevant information through interviews, access to all documents and resources as well as taking part in the classroom observation (Code of Ethics of the American Anthropological Association, 2009, 3).

The informed consent process is a dynamic, continuous and reflexive process that does not necessarily imply or require a particular written or signed form because it is the quality of the consent, not its format, that is relevant (Statement on Ethics of the American Anthropological Association, 2012). In this thesis, teachers' informed consent (See appendix D) was obtained through a written form and as a "basic ethical rule, all participants agreed to participate in the study voluntarily" (Babbie, 2007: 26). Parents of learners were also informed of classroom observation through a formal letter (See appendix E) via school management since the interaction of LO teachers with learners was an important part of this study. Authenticity of the research findings

was another important component of this thesis to ensure rigorous of the research findings.

3.10 AUTHENTICITY OF RESEARCH FINDINGS

Authenticity in research is important for two reasons as described by Bush (2002):

- *It helps in assessing the quality of studies undertaken by other researchers.*
- *It helps in determining their research approach and methodology.*

McMillan and Schumacher (2010: 335) refer to authenticity as the "faithful reconstruction of participants' perceptions and connecting with them and their situations." It remains an important issue in qualitative research and may be achieved through alternative concepts such as triangulation. Triangulation was used in this study to promote reliability and validity of the data in order to ensure quality of data as described by Bassey (1999).

3.10.1. Reliability and Validity

Two categories of validity are noted by Bush (2002: 66-7):

- *Internal validity: Relates to the extent that research findings accurately represent the phenomenon under investigation.*
- *External validity: Relates to the extent that research findings may be generalised to the wider population that the sample represents.*

The question remains, "Is the data reliable?" (Bush, 2002: 65). The use of validity and reliability could create a complex situation when doing research and this tension is noted also by Kleven (1995) and Brock-Utne (1996) cited in Bush (2002) who question:

> *Whether we need the concept of reliability at all as an independent concept since the question of reliability has little relevance except in connection with the question of validity. Reliability … only has relevance because it is a necessary precondition for attaining validity (Brocke-Utne, 1996: 614).*

Le Grange 2009: 7) in addition, states that validity is a test that measures exactly what it is supposed to measure. Aspinwall et. al (1994: 218) contend, "where reliability is a problem, there is advantage in using more than one kind or source of data in relation to a particular situation; that is, triangulation." To ensure authenticity of research findings, triangulation was used to enhance the validity in this research study.

3.10.2. Triangulation

Triangulation is strongly recommended by case study proponents such as Yin (1993) and Stake (1995). Triangulation is deemed to be one of the best ways to strengthen validity and reliability in any research (Babbie and Mouton, 2001) and a 'vehicle for achieving high quality, rigorous and respectable research' as noted by Rule and John (2011: 108). Cohen and Manion (1994: 235), agree and state that triangulation may be used in interpretive research, but is of great value in case study research. Nisbet and Watt (1984: 85) note the value of triangulation in case study research:

> *In order to guard against being misled, either in interview or by documents, you must check one informant against another, and test what they say against any documents that exist. Similarly, observations in one context must be checked against others in comparable situations. This process is called triangulation. The basic principle in data collection for case study research is to check data across various methods and sources.*

Two types of triangulation exist (Bush, 2002: 68):

- *Using several methods to explore the same issue (methodological triangulation)*
- *Asking the same questions of many different participants (respondent triangulation).*

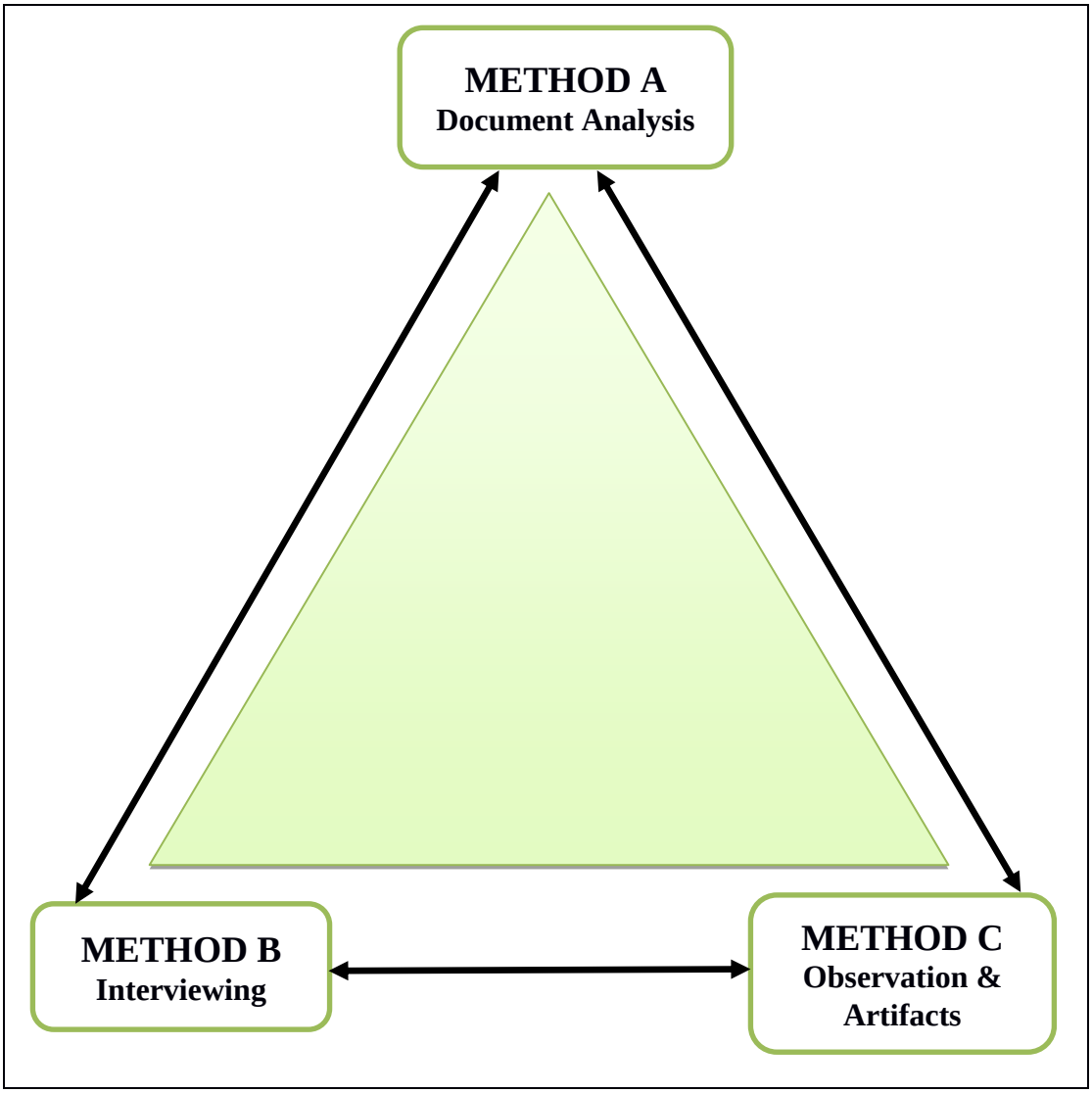
McFee (1992) explains the two types as triangulation between methods employs two or more approaches to a single problem … triangulation between methods compares two research solutions with a single problem in an effort to validate the outcomes of one approach in terms of the outcomes of another (McFee, 1992: 215). Triangulation therefore ensured rigour and 'eliminated the inaccuracy or bias as highlighted by Rule

and John (2011: 109). In this research study, triangulation was used through interviewing (what teachers say), observation (what teachers do), artifacts (methods and techniques used by teachers) and document analysis (what teachers are supposed to do) of the teaching of environmental concepts in LO in grade 9.
Robson (1994: 243) points to the value of using interviews and observations for triangulation in a study primarily based on content analysis of documents:

> *"The documents have been written for some purpose other than for research, and it is difficult or impossible to allow for the bias or distortions that this introduces . . . [There is a] need for triangulation with other accounts [and] data sources to address this problem."*

The next figure shows how triangulation was used in this thesis:

Figure 3.3: Triangulation



Adapted from Rule and John (2011, 109)

3.10 LIMITATIONS

I was interested in only the perspectives of Grade 9 LO teachers regarding their experience of teaching environmental concepts and approached teachers who did this work, as I felt they were information-rich with respect to the purpose of this thesis. In chapter 4 a more detailed analysis and discussion of each teacher's perspective will be presented in relation to the research question(s).

According to Rule and John (2011: 110), research involves certain choices about issues such as methodology, sites, samples and methods of data collection. These choices carry with them some limitations resulting in good quality and responsible research. The following limitations as presented by Rule and John, 2011 (110-1) were taken into account:

- *Chosen methodology*

This case study did not allow the findings to be generalised to the entire population of cases. Its intention was to give detailed discussions on teachers' particular and unique perspectives, possibilities, challenges and how to overcome them when implementing CAPS curriculum requirements in LO to grade 9 learners. In addition, Bassey (1999, 53), argues that generalisations tend to omit the details of context and circumstances that give case studies meaning. The reader should bear in mind that the case study is based on rich description of grade 9 LO teachers' "unique" (Adelman et. al., 1984, 95) perspectives on the implementation of environmental concepts and the findings therefore cannot be generalised. Bassey (1999: 53) in Lotz-Sisitka and Raven (2004: 82-3) argues that it is impossible to generalise from case study research as generalisations tend to omit the essence of content and circumstances that give case studies meaning. This is also noted by Rule (2011) as he highlights the absence of a comparative dimension within single-case research. Its intention was to give detailed discussions on teachers' particular and unique perspectives, possibilities, challenges and how to overcome them when implementing CAPS curriculum requirements in LO to grade 9 learners. In addition, Bassey (1999: 53), argues that generalisations tend to omit the details of context and circumstances that give case studies meaning.

- *Choice of site*

Schools were relatively close to each other, which allowed me easy access. I initially chose more than three schools and ended up with only three schools being part of this thesis. Some schools refused to be part of this thesis due to their academic timeframe.

- *Sample*

Five teachers were part of this thesis in the beginning but I ended up with four grade 9 LO teachers from Western Cape high schools took part in this study to investigate how they implement environmental concepts in health, environmental and social responsibility in the subject LO under CAPS.

- *Practical and logical circumstances*

Environmental concepts were not presented at the same time, so I had to go to schools on multiple occasions to check if concepts were taught. The study was linked to environment and environmental issues in LO only, so this was a focused look at LO in CAPS specifically. Some schools were busy with control tests, which resulted in shorter time periods for classroom observations.

3.11 SUMMARY

This chapter outlined the applicable research design, research paradigm, sample selection, ethics in research, applicable research methods, transcribing of data, data analysis, authenticity of research findings, as well as limitations of this thesis. It also gave an explanation why a qualitative interpretive research design was used to answer the research question. The aims and objectives of the research were met by using semi-structured interviews, observation, documents and artifacts and these were interpreted and analysed. A nested case study provided an in-depth exploration of the research problem as experienced by grade 9 LO teachers in the Western Cape when implementing environmental concepts.

The following chapter will give a preliminary analysis of the data presentation and data collected using the methods discussed in this chapter 3. It will present teachers' perspectives on the implementation of environmental concepts in LO in grade 9 in Western Cape high schools. Data will be presented through thematic analysis in chapter 4.

CHAPTER 4

DATA PRESENTATION (PRELIMINARY ANALYSIS)

4.1 INTRODUCTION

The previous chapter described the research methodology and design used to gather data for this thesis. Data were collected through:

- An interview schedule with semi-structured questions to allow for open-ended answering (See appendix 7).
- An observation rubric used during observation in the classroom (See appendix 10).
- Artifacts that included proof of learners' tasks assessments (see appendix 16, 17 and 18) posters within the classroom related to EE and LO, lesson plans of teachers and other proof of teachers' engagement with the subject LO (See appendix 12, 13, and 14).
- An analysis of the LO CAPS policy document and all other related documents of South African school curriculum to see how teachers cope with EE curriculum imperatives in grade 9 LO.

4.2 OVERVIEW OF DATA PRESENTATION

This chapter gives a presentation of the research findings collected during fieldwork of this thesis by using the methods discussed in chapter 3. It includes the contextual profile of schools, details of each research participant, that is, their biographical details and qualifications as well as their teaching practices: EE implementation in LO. It also presents the preliminary analysis of data and interpretations of the research findings that were collected during fieldwork. Interpretation according to Mouton (1996: 161) refers to the part where a connection is made between data and the research problem:

> *The thesis is related to the problem areas of implementation, specifically environmental concepts in the subject LO under the CAPS policy document.*

The following thematic groups emerged during the research process and gives an interpretation of the case element, teachers' practices: EE implementation in LO.

- *Themes from interview data*
- *Themes from observation data*
- *Themes from artifact data*

Themes derived from collection methods inductively answered the main research question:

> *How are teachers implementing environmental concepts in the Life Orientation curriculum in grade 9?*

The main research question was analysed under the following subheadings:

> *1."How do teachers understand the required implementation of environmental concepts in LO?*

This question covered an understanding of the required implementation of environmental concepts in grade 9 LO.

> *2.What possibilities do teachers envisage for implementing environmental concepts in LO?*

Under this question, teachers needed to elaborate on their perspectives on how to better the teaching of environmental concepts in LO to grade 9 learners.

> *3. What challenges, if any, are teachers facing when implementing environmental concepts and how can teachers overcome them?"*

This question covered the extent to which the implementation of environmental concepts in LO affected teachers' teaching and what teachers had to change or overcome to implement environmental concepts successfully. The final product of this thesis will be shaped by the data collected and the analysis of the data as noted by Merriam (1988: 124).

4.3 NESTED CASE STUDY

Three Western Cape high schools took part in this thesis, each representing a case in the nested case. Three case elements were discussed and formed part of this nested case.

Case element one: Contextual profile of schools

This revolved around the socio-economic status of the community in which each case was situated.

Case element two: Teachers' biographical details and qualifications
This included the biographical details and qualifications of teachers who took part in this thesis.
Case element three: Teachers' practices (EE implementation in LO)
This includes all the themes that emerged during the thesis. It included interview, observation as well as artifact data.

4.3.1 Case Element One (Contextual Profile of Schools)

This case element revolves around the socio-economic status of the community in which the cases are situated. Case one and three were in dominant Coloured communities in terms of Apartheid classification. These cases were situated in communities with low socio-economic conditions such as poverty. A study in America done by Berliner (2013: 5) indicated that outside factors have a more powerful effect on student achievement than inside factors of the school. So due to historical disadvantage of these communities, case one and three lacked resources for teaching environmental concepts in LO for grade 9. A lack of resources has some implications and limits teachers when teaching environmental concepts in grade 9, which could result in poor academic performance. Teacher one and three were interviewed at school one and teacher fours was interviewed at school three.
Case two is a former model C school in a predominantly White community. Case two was well resourced with projectors and Internet facilities in classrooms in terms of Apartheid classifications. Learners were also allowed to use their cellphones in the classroom as an educational tool. This school continues to have these historical advantages and is seemingly better able to cope with curriculum demands. Teacher two was interviewed at this school.

4.3.1.1 Reflection on Case Element One

Reflecting on case elements it is evident that a legacy of Apartheid is still very dominant in our education system today. Case two is attended by the majority of White learners and a study done by Um Ramnarain (2014) noted that these urban and suburban schools have better facilities and are located in communities with a higher socio-economic status as highlighted by Erasmus and Ferreira (2002). Berliner (2013: 8) emphaised that wealthier areas in the United States of America, for example, are

also funded differently compared to schools that are situated in communities with low socio-economic conditions. Heuer and Stullich (2011) showed in their research that 48 % of high-poverty schools receive less money in their local school districts than do low-poverty schools. Berliner (2013: 3) argues that the design of better economic and social policies could do more to improve American schools than continued to work on educational policies. Due to inequality and poverty (Berliner, 2013: 11), lower funding can easily overburden schools, making it harder to teach and to learn in such institutions. A study in America done by Berliner (2013: 5) indicated that outside factors have a more powerful effect on student achievement than factors inside the school.

4.3.1.2 General Observation of School Building Structures

General observation of the school building structures was as follows:

- Case one - Buildings were in good condition
- Case two - Buildings were in excellent shape
- Case three - Buildings were in good condition

4.3.2 Case Element Two (Teachers' Biographical Details and Qualifications)

This included biographical details and qualifications of teachers who participated in this thesis. Teacher one preferred to be interviewed in English; teacher two, three and four preferred to be interviewed in Afrikaans. The following table gives an outline of research participants' biographical details.

Table 4.1: Biographical Details of Teachers

Teacher	School situation	Age	Gender
Teacher 1	Urban	24	F
Teacher 3	Urban	49	M
Teacher 2	Urban	23	F
Teacher 4	Rural	32	F

Four teachers took part in this thesis and their biographical details included their age and gender, years of teaching experience as well as years teaching the subject LO. Their years of teaching experience range from 1 to 10 years. Teacher three had the longest teaching experience and teacher two the shortest. Teacher four has been teaching LO for three years, whereas teacher two had been teaching for only three weeks in total. The following table gives an outline of the qualifications of teachers.

Table 4.2: Qualifications of Teachers

Participants	Qualifications	Subjects teaching	Years of Teaching Experience	Years of LO teaching
Teacher 1	Bachelor of Commerce degree + PGCE	Mathematics EMS	1 year 7 months	1 year 7 months
Teacher 3	Three year teaching diploma + Advanced Certificate in Education (ACE) Bachelor of Technology Bachelor of Technology (Management)	Computer Application Technology (CAT) Woodwork Geography	24 years	7 months
Teacher 2	Bachelor of Arts Humanities (Psychology) Post Graduate Certificate in Education Honours in Educational support (current)	Psychology	10 months	3 weeks
Teacher 4	Bachelor of Education	RDT Business Studies	10 years	3 years

4.3.2.1 Reflection on Case Element Two

Reflecting on teachers' qualifications, it is noted that two teachers (teacher one and two) completed the PGCE programme and teachers three and four completed a Bachelor of Education. With regard to teachers' qualifications, all four confirmed that they had not received training in LO during their teacher training, nor during in-service training. All four teachers confirmed that they were not trained to teach LO as a subject in the CAPS policy document. Teacher one and three confirmed that they were teaching the subject to fill the gap on their personal timetables. This was also noted by Gous and Roberts (2015: 64) as a response to statements educators and academics specialising in LO often hear:

"LO is given to any teacher whose periods have not been filled to the full."

Gous and Roberts (2015) regard this as unacceptable, and contrary to the ideals of quality education for all. LO has five specialisation fields and teachers in this thesis do not have a qualification in one of these specialisation fields as highlighted by Gous and Roberts (2015, 63-4):

- *Development of the self in society*

A teacher needs good grounding in Psychology and Sociology. Teacher 2 has a degree in Bachelor of Arts Humanities (Psychology) which qualify her to teach this theme.

- *Health, social and environmental responsibility*

Foundational knowledge in Biology and Environmental Sciences is needed.

- *Constitutional rights and responsibilities*

Political Science and Constitutional Law is a prerequisite for presenting this topic.

- *Physical Education*

A teacher needs grounding knowledge in Human Movement Science to offer this theme.

- *World of work*

Career Psychology is required to present this theme.

It is therefore clear to note that LO is an academic subject with an experiential touch as stated by Gous and Roberts (2015), because it touches mind, body and soul and this is in contrast to other academic subjects that only involves the mind. Case element three, teachers' practices (EE implementation in LO) will now be discussed.

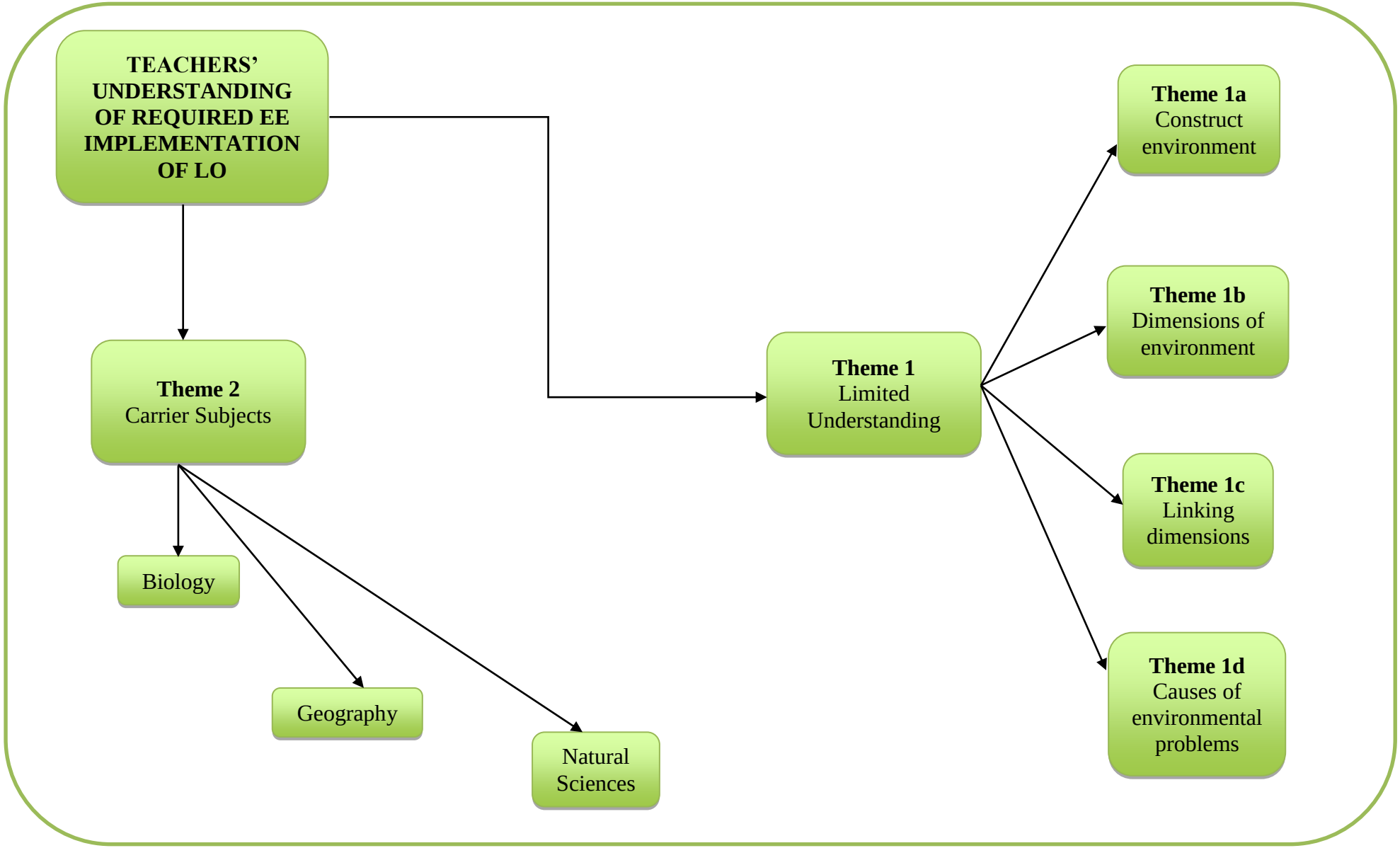
4.3.3 Case Element Three (Teachers' Practices)

Teacher practices relates to EE implementation in LO. The data presented below were organised into themes that emerged during the analysis process as described in chapter three. Data presentation is linked to the sub-questions of the main research question. Themes derived from interview data, observation data as well as artifact data.

4.3.3.1 Emergent Themes from Interview Data

Under these sub-questions, various aspects emerged from the interview data and will be summarised according to the sub-question applicable. Interview data were related to an understanding of the requirements to implement environment concepts in grade 9. Excerpts from interview data are presented in table form.

Figure 4.1: Main Themes (Interview Data)



4.3.3.2 Theme 1: Limited Understanding

Teachers showed a limited understanding of the required implementation of environmental concepts in LO. This theme was related to the following question. The following interview excerpts were recorded.

- *What are the requirements for implementing environmental concepts in LO?*

Teacher 1	"I don't know a lot about CAPS. It's a guideline to do what I must do." "LO is seen as just another topic to handle."
Teacher 3	"The content, you know, raising awareness within our kids about their environment, what they can expect in life, it actually helps them to prepare for life, so to speak."
Teacher 2	"CAPS is very prescriptive, but I don't think the content is necessarily irrelevant, I think the content is indeed relevant that they are learning (the learners)". "The environmental concepts in the LO curriculum is not enough. I think it needs more detail, for that matter."
Teacher 4	"For me it's okay. I've been used to CAPS for a long time, RDT, etc. and I don't have much of a problem with it and it is beautiful, everything is nicely explained. You have your teachers' guide that helps and work schedules, examples of it and for me it helps a lot."

4.3.3.3 Theme 1a: Construct environment

Teachers showed a limited understanding of the construct environment. This question was based on the following interview question:

- *How would you define the construct / concept environment?*

Teacher 1	"It refers basically to your surroundings", "Inside your house would also be your environment, so it is what you are surrounded by."
Teacher 3	"Everything around me, everything in which I move, or in which I live, or with whom I came in contact with."

Teacher 2	"Environment consists of three spaces", "Society, social and physical space", "Most of the time whether at school or work these are the three spaces in which you move around."
Teacher 4	"This is where you live, where you breathe and where you develop yourself as a person.

4.3.3.4 Theme 1b: Dimensions of the environment

Teachers showed a limited understanding of the different dimensions of the construct environment. This theme was based on the following interview question:

- *What aspects/dimensions of the environment are covered in the Life Orientation curriculum for grade 9?*

The environment is seen as only a social issue	
Teacher 3	"We are busy working with organisations, voluntary work, which is part of the environment, and of course what the child can do to get involved in certain organisations."
Teacher 2	"LO is your psychology at school, a subject where learners learn life lessons."
Teacher 4	"Drug abuse, HIV and AIDS, teenage pregnancies, positive and negative role models."
The environment is seen as only a biophysical issue	
Teacher 1	"How it's used mostly is when we refer to Nature and the outside world. Icebergs (polar ice caps) are melting, lack of water in some places, global warming, polluting the air, polluting water, polluting the Earth. We can recycle, driving cars that don't give off emissions."
Teacher 4	"… learners going out and do volunteer work and picking up of papers, go to the shop for the lady next door."
The environment is seen as only an economic issue	
Teacher 2	"… because of consumer-driven society, pollution occur and the breaking down of the environment."
Teacher	"It's usually funds and because our kids come from poor communities."

4	
The environment is seen as only a political issue	
Teacher 2	"I actually want to say open spaces that are being cleaned now and the building of flats, there is almost nothing, but there are still many houses, but I feel it is slowly (becoming) only flats."

4.3.3.5 Theme 1c: Linking Dimensions

Teachers showed difficulties in linking the four dimensions of the environment.

Teacher 3	"… use for instance LO and geography to address two issues at the same time, facts and society. Yes, for example, the child does global warming in Geography and then in LO for example, he can learn what to do, and what not to do in his environment as well as his home. In this way one can let the two blend together and not specifically to create a new subject."
Teacher 2	"Is it a poor community or a rich community? Are there many needs? Is it a more privileged community? Types of school and universities."
Teacher 4	"It is usually funds and because our kids come from poor communities. Funds are not always available to take the learners on excursions and discussions and stuff. So, I think that is probably our biggest challenge, or especially for me. You want to do it, but you cannot always do it."

4.3.3.6 Theme 1d: Causes of Environmental Problems

Teachers showed limited understanding of the cause of environmental problems and how they came into existence.

Teacher 1	"I think as human beings we became so greedy almost that we use the resources, the natural resources we have at such a rate that Nature cannot even keep up with us. … I believe the word is almost negligent that we don't really care what we do to the environment around us and what happens to the environment."
Teacher	"… according to me it has to do with the progress of technology. So, and

2	with the overpopulation comes all these environmental issues so I think it is all related to our driven culture of having more and more and better and better."
Teacher 4	"Why did they take away corporal punishment? is also one of the questions that comes to mind with today's children. I didn't really think about it, so I don't have an answer."

4.3.4 Reflection on Main Themes (Interview Data)

4.3.4.1 Theme 1: Limited Understanding

Under this question the definition of the construct environment and dimensions of the environment were analysed. Excerpts from interview data related to the required implementation of environmental concepts in LO were presented.

According to Teacher one, environmental concepts in LO should not be taught in its current form as prescribed by CAPS. Teacher one thinks differently and oversteps what is presented in the CAPS curriculum. The CAPS policy document is seen as just another document. Teacher three feels that being a teacher for almost 25 years, some of the content for grade 9 LO learners are overemphasised and unnecessary, especially the part that deals with relationship education. Teacher two sees the CAPS curriculum as a useful guide. According to this teacher, CAPS contains broad content and as a teacher adding to the content make it more meaningful. Teacher four uses the CAPS policy document as a guide for presenting environmental concepts to grade 9 LO learners.

4.3.4.2 Theme 1a: Construct Environment

All four teachers seem to have a limited understanding of the construct environment in terms of EE literature reviewed. None of the teachers made a reference to (even indirectly) the multidimensional nature of the construct environment. It was also noted that teachers do not see the environment as a product of human interactions and ecological processes. The apparent lack of understanding of the broader ideas related to the construct environment could be attributed to the limited presentation of EE in teacher education programmes. Another factor influencing the lack of understanding of the construct environment or lack of making reference to the textbook definition

could be due to teachers' specialisation field. Gous and Roberts (2015) identify the following specialisation fields within the LO CAPS curriculum related to the environment.

- *Development of the self in society: A teacher needs good grounding in Psychology as well as Sociology to present this topic.*

Health, social and environmental responsibility: A teacher needs foundational knowledge in Biological and Environmental Sciences, coupled with Sociology, to present this topic. In general, it appears as though the teachers in this study fall short in the knowledge aspect required for good teaching as developed by Shulman (1987) Shulman (1987) highlights subject matter knowledge as the most important characteristic and argues that teachers need to have three kinds of subject matter knowledge: content knowledge, pedagogical content knowledge and curricular knowledge.

4.3.4.3 Theme 1b: Dimensions of the Environment

- *Social issues*

There were social issues mentioned by teachers as important environmental issues related to the subject LO. It would appear that teachers have some knowledge of the environment in terms of social issues. This could be attributed to the nature of the subject LO as a subject in CAPS, which does not directly deal with ecological dimensions of the environment explicitly but rather achieving the aim of, "using science and technology effectively and critically showing responsibility towards the environment and the health of others" (SA DBE, 2011: 5). Thus, "the health of others", gives LO a social outlook to these teachers. Teachers two, three and four mentioned social aspects of the environment and it can be linked to a limited understanding of the social dimension of the construct environment. Teacher four has a strong social perspective of the environment because her answer reverted back to the social aspect of the environment in terms of the biophysical dimension. Teacher four, however, has a broad geographical understanding of the environment and referred to *"how the seasons changed and (are) still changing."* Teacher one and four mentioned some biophysical aspects of the environment and this can be linked to a

limited understanding of the biophysical dimension of the construct environment. Teacher two has a Psychology degree and referred to LO as your Psychology of school. Teacher three has some experience teaching Geography, but no official qualification related to the environment; Teacher one and four, on the other hand, had studied business-related subjects.

- *Biophysical issues*

Teachers do not see that Human-Nature interactions are responsible for environment problems. Nothing was really mentioned about Human-Nature interactions and how the biophysical dimension actually sustains life of all organisms (Reddy, 2008)**.** The biophysical dimension is based on diversity of living organisms and their interactions. This is believed to be life-sustaining as many processes - for example, photosynthesis and the water cycle - lead to replenishment of resources to sustain life. Teachers did not mention any of these processes, so it is inferred that they are unaware of these, hence the conclusion that their understanding is limited or superficial.

- *Economic issues*

Two teachers mentioned some economics knowledge related to the concept environment. The economic dimension of the environment is directly linked to the consumer-driven society we live in as mentioned by teacher two and teacher four.

- *Political issues*

Teacher two touched on the political dimension by mentioning that big corporations enter into agreements with government and they then decide where to develop new structures. Big corporations are responsible for keeping the economy going and therefore enter into agreements with government on where developments (both urban and industrial) should take place.

4.3.4.4 Theme 1c: Linking Dimensions

Teacher two and four linked the economic dimension with the social dimension while teacher three made a link between the social and biophysical dimension of the environment. Three teachers could therefore link some of the dimensions of the environment with the others, bringing forth social-ecological interactions and understanding of the environment as a construct.

4.3.4.5 Theme 1d: Causes of Environmental Problems

Two teachers have an understanding of how environmental problems came into existence. Teacher one and two touched on the cause of environmental problems and how it came into existence. Teacher four did not know how environmental problems came into existence and reverted to the social outlook of the environment as the cause of environmental problems. Teacher two preferred to answer this interview question in the next interview.

4.3.5 Theme 2: Carrier Subjects of/for Environmental Education

Teachers mentioned subjects such as Geography and Biology as providing knowledge specifically related to the environment.

Teacher 1	"Like we could say that environmental study should only be done in Geography 'cause it's a geographical issue, right? And we could say that it could only be handled in Biology, because to some extent it's also a biological issue."
Teacher 3	"… but when it comes to subjects (such) as Geography to add a bigger portion of the environment, but let the two subjects be connected in a way."
Teacher 2	"As I just said, there isn't another subject that teach(es) learners about this, except Geography, but Geography is not a required subject and I feel learners that do not take Geography will miss that information about the environment in their life."

4.3.5.1 Reflection on Carrier Subjects of/for Environmental Education

A narrow perception exists regarding which subject is the perfect home for environment-related issues. This poses a challenge that a limited understanding of EE exists. Catling (2013) argues that a subject's distinctiveness could get lost if it is integrated with other subjects, as indicated in his research on the National Curriculum of Geography in Australia. My perception of teachers within this thesis is that they regard the environment as a geographical or biological problem and this could be linked to their understanding that it should be taught with a practical approach. The

revised South African school science curriculum advocates an inquiry-based approach to learning that encourages learners to "explore objects, situations and events in their immediate environment, to collect data and record information and draw conclusions accurately" as stated by the Department of Education (2002: 34). In contrast Lee (1997) stated in Hong Kong most schools tend to teach EE in the formal curriculum through existing moral, civic and religious education programmes and in the informal curriculum, schools tend to organise such EE activities as visits to nature reserves and urban and country parks, field trips and competitions.

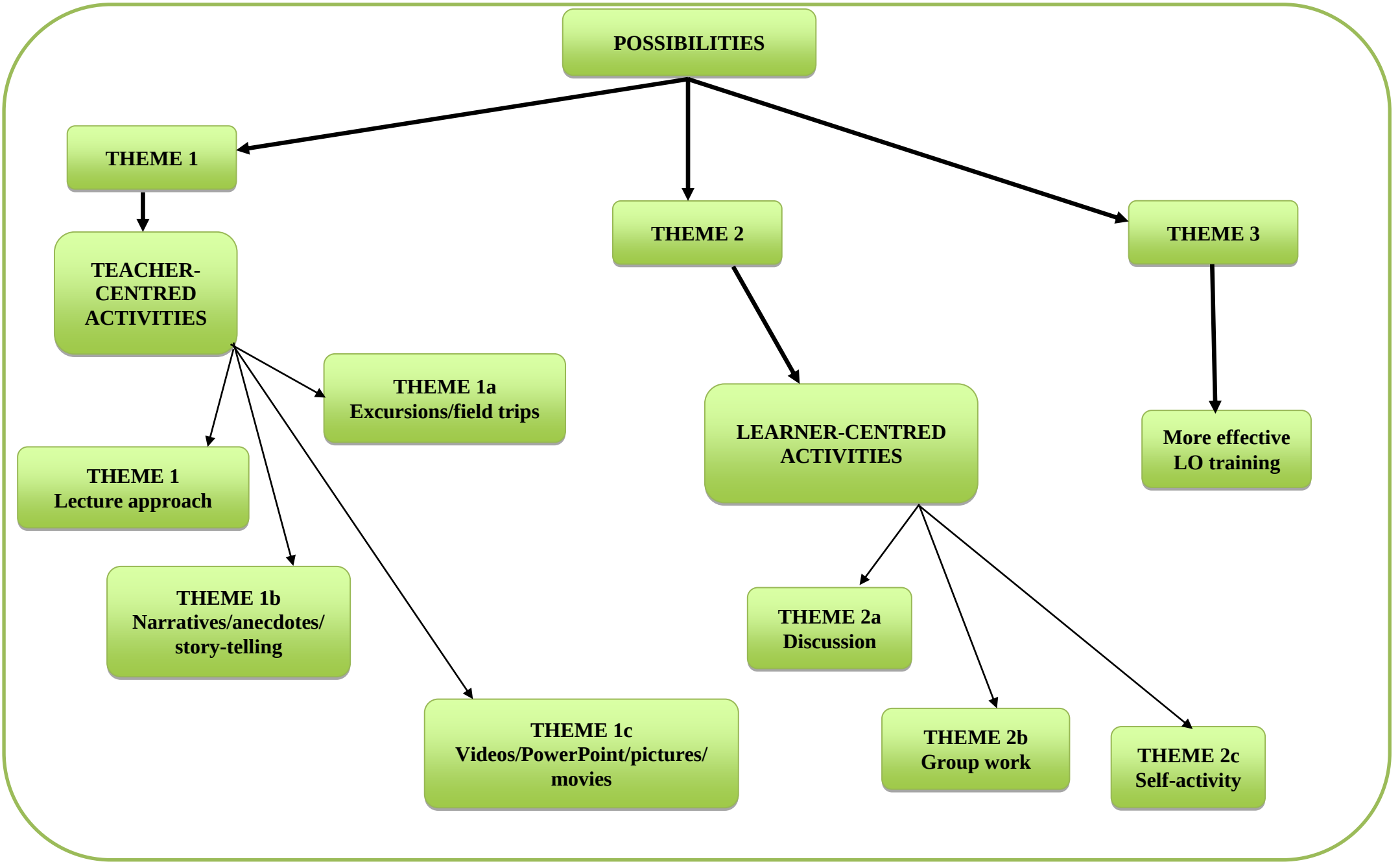
4.4 POSSIBILITIES TEACHERS ENVISAGED

Teachers envisaged the following possibilities for implementing environmental concepts in LO. This theme revolved around the second research question.

- *What possibilities do teachers envisage for implementing environmental concepts in LO?*

The following figure presents the possibilities teachers envisage for implementing environmental concepts in LO.

Figure 4.2: Possibilities Teachers Envisage for Implementing Environmental Concepts in LO



The above teaching methods were mentioned by teachers as possible ways to implement environmental concepts in LO. The data presented below is a combination of interview data and classroom observation data. Initially, I interviewed teachers about their practices and then observed lessons related to environment in LO. Possibilities teachers envisage were divided into teacher-centred activities and learner-centred activities as well as more effective LO training.

4.4.1 Theme 1: Teacher-Centred Activities

The lecture approach
All 4 teachers used the lecture approach to teach environmental concepts in LO to grade 9 learners.

4.4.1.1 Theme 1a

Excursions/Field trips	
Teacher 1	"… and so I think to take them on an excursion, to show them what's really going on."
Teacher 3	"Practical activities, hands-on activities and excursions are the best way to teach environmental concepts in LO. Get people in from organisations to come and talk to learners. …what your organisations is about, what you do in the environment, and also taking them in the field yourself, so that they can see how it is done, and what exactly they do in the community."
Teacher 2	"Environmental concepts need practical teaching methods. Tak(ing) learners out will result in them having an understanding of it. If it's the case of an excursion or so, it should be organised long before the time, but it is indeed available, we can do it."
Teacher 4	"If better resources availability, taking learners on excursions, show learners how plants look like in real life."

4.4.1.2 Theme 1b

Using narrative / anecdotes (story-telling) as experiential teaching method	
Teacher 4	"I used my grandmother as an example and how she cooked herbs and stuff at home and so we grew up with that. The children like when you talk about yourself. They find it interesting when you talk a little about yourself."

4.4.1.3 Theme 1c

Use of videos / PowerPoint / pictures / movies	
Teacher 1	"Providing pictures and videos to make it more attractive and to get learners caught up in the issue."
Teacher 2	"Learners pay attention because they have a visual mind set. It is part of learners' daily life. Should be relevant for learners to relate to it to some extent. Effects on the PowerPoint with transitions and animations."
Teacher 4	"Magazines, newspapers and news media. Also films where violence and drugs and those things are abused. Also gather pictures from magazines and newspapers. I usually talk about films."

4.4.1.4 Reflection on Teacher-centred Activities

The lecture approach seemed to be the dominant teaching method used by teachers in this thesis. It is an approach that is an actual reality and not a possibility. The highly prescriptive nature of the CAPS curriculum is partly responsible for this. Teachers tend to revert to this method of teaching to maintain discipline within their classrooms. This common teaching method was used by all four teachers (teachers did not mention this as a teaching method) but I observed it during classroom observation. There is a persuasive body of literature that argues that teachers often revert to lecture teaching to prevent discipline problems in their classrooms. In his research in British schools, Woods (1990) attributes various teacher strategies to the crucial need simply to establish and maintain control which he calls "survival strategies" (in Blignaut, 2008: 114). Similar findings were noted by Blignaut (2008: 118) where a lack of materials, large classes (teachers one, three and four lacked materials; teachers one and three had large classes) and poor library facilities were factors that plagued schools and contributed to a more traditional, teacher-centred way of teaching.

A possibility for teaching EE in LO mentioned by teachers, but due to lack of resources (funding and transport) this teacher-centred approach will remain just an idea proposed by those interested in teaching EE in LO.

Teacher four used the story-telling method. Brunner (2002: 8) says the following about story-telling: “Stories impose a structure, a compelling reality on what we experience, even a philosophical stance”. In other words, this teacher allows her learners through story-telling to develop an understanding, respect and appreciation and promote positive attitudes towards cultures and the environment. Learners are also able to explore their own cultural roots. Story-telling has the advantage of facilitating thinking and problem-solving involving multi-sensory thinking, which results in deep thinking and understanding of concepts from different perspectives. Problem-solving is an important skill for dealing with EE issues as stated by Van Rooyen (2006), which is aligned with the CAPS policy document states (DBE SA, 2011: 15).

Teacher one sees the use of pictures or videos as making LO more attractive to learners. Teacher two used PowerPoint to present her lessons and made use of videos to present the issue of EE in other parts of the world. Although it was mentioned as a possibility in the teaching of EE in LO, teacher two added videos to make LO more meaningful to the learners. Also, none of the other teachers had the necessary resources to make EE attractive through the use of digital media. Teacher four regards the presence of videos/movies as important, with a social perspective when teaching learners about social problems.

4.4.2 Theme 2: Learner-centred Activities

The following learning activities were the most important student-driven approaches envisaged by teachers for teaching environmental concepts. Some of the learning activities were also executed during the observation.

4.4.2.1 Theme 2a

Discussion (controlled group discussion)	
Teacher 1	"… and also give them a chance to add verbally sort of contribute to the class with questions and anything they like to add to what I said. So, the class is very much a discussion class that we have, yes."
Teacher 3	"… I let them sometimes work in groups, discussions."
Teacher 2	"… and this is easier and simpler for me to stand in the class and share the content with learners and having a discussion."

4.4.2.2 Theme 2b

Group Work	
Teacher 3	"I let them work in groups, discussions and so (on)."
Teacher 2	'I think they are going to work in groups and gather information about a need in the community and a volunteer organisation."

4.4.2.3 Theme 2c

Self-activity (Projects, assignments)	
Teacher 1	"Give them a task to identify a very big problem in the environment to give me sort of the causes and give solutions...."
Teacher 3	"… and then of course depending on their assignments, like the ones they have now, do research."
Teacher 2	"Give learners assignments and practical projects. They need enough time to plan. Clear instructions and assistance. No need to stand in front of the class and sharing the content with learners via class discussions when using the above."
Teacher 4	"I make examples of elements that are within the current environment where they live and its things that they see every day and experience."

4.4.2.4 Reflection Learner-centred Activities

Teacher one said she uses discussion so that learners have the opportunity to ask questions in class. Teacher two used pictures and videos to present the theory part of LO. Learners had to discuss their activity and I observed that in some classes learners were undisciplined. In teacher one's class learners made fun of some of the topics mentioned by the teacher. In teacher three's class, learners were well behaved. The group method was the most common method used by all teachers. Teacher one discussed the following:

Topic: *Sustainable Development*

Look at the condition at your home and school environment and identify the following:

Learners had to answer four questions related to the topic sustainable development (Examples in appendix)

All four teachers mentioned that group work is a possibility in teaching environmental concepts in LO. All four teachers divided their learners into groups to teach environmental concepts. They did an activity and learners had to present their group work to the class.

Projects and assignments are part of the formal assessment in LO (SA, DBE: 2011). Evidence of learners' work in LO (see appendix 17 and 18).

4.4.3 Theme 3

More Effective LO Training	
Teacher 1	"training for LO teachers (is) important."
Teacher 2	"include more detail of EE in teacher' training curriculum. Teacher' training should cover concepts presented in the LO textbook in order to be familiar with the content that they are going to teach."

4.4.3.1 Reflection on More Effective LO Training

This theme also resulted as a challenge as teachers mentioned limited training for LO. Teachers would like to have more LO training, but they do not receive any in-service training. Teachers mention training for subjects such as mathematics, science as well as languages to be more important. More will be discussed on more effective LO training under the next theme, challenges.

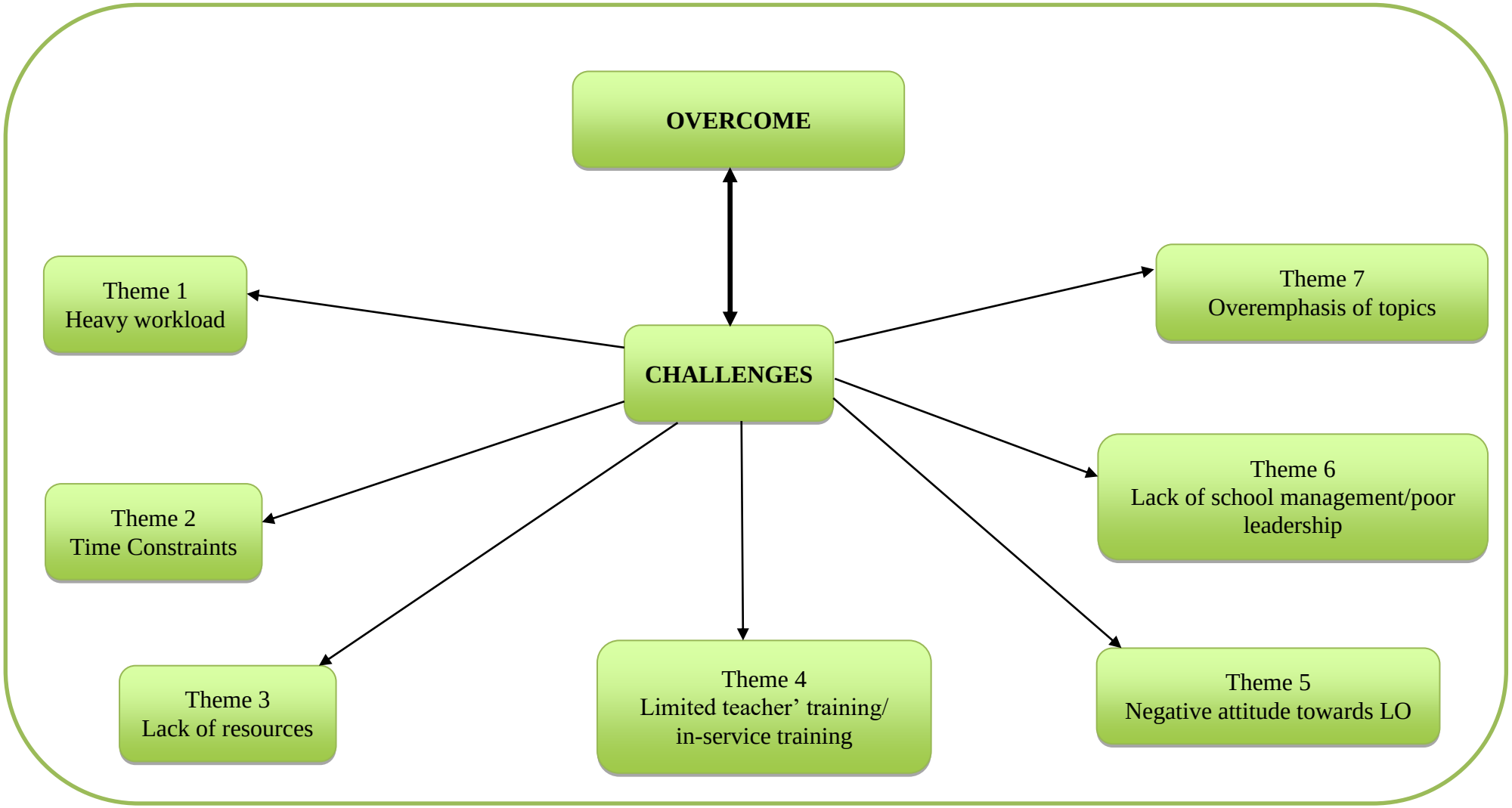
4.5 CHALLENGES

This question is divided into two parts. Teachers experience various challenges that prevent them from effectively implementing environmental concepts in LO in grade 9. However, teachers have implemented their own strategies to overcome these challenges. The following data entail a list of the various challenges that teachers face and their strategies to overcome these challenges to make things work within the LO classroom environment. The challenges are based on the following research question:

> *What challenges, if any, are teachers facing when implementing environmental concepts and how can teachers overcome them?*

The following diagram shows the challenges that emerged from this study.

Figure 4.3: Challenges Teachers Face



4.5.1 Theme 1

Heavy workload	
Teacher 3	"It's too much work to complete. There are too many expectations."

4.5.2 Theme 2

Time constraints for EE	
Teacher 3	"Too little time and too much content." "There are too many expectations, before the child really gets introduced to some concepts and things and then, we have to move forward as a result (of) time."
Teacher 2	"We have a lot of theory to be covered as time is limited. Time is a great challenge."

4.5.3 Theme 3

Lack of resources	
Teacher 1	"Textbook and teachers' guide are the only available resources." "No EE resources from curriculum advisor, only social/psychological resources such as posters."
Teacher 3	"Look, (currently) at the school we do not have resources. Posters come with the teachers' guide, which I do not have."
Teacher 4	"… and then, we are also a non-fee school, so it's difficult to go beyond the lesson in the class. Funds are the biggest problem."

4.5.4 Theme 4

Limited teacher training in LO and/or limited in-service training in LO	
Teacher 1	"Received no training during teacher education with regard to LO and EE. Received no in-service training for LO."

	"Other subjects, yes, like maths. Workshops every holiday, during the school term and after school."
Teacher 3	"No in-service training for LO. LO itself did not exist during my teacher education in 1986. I did not receive any training in CAPS LO itself."
Teacher 2	"Limited training in LO during teacher training (PGCE). Did the LO theory only." "Concentrated only on how to handle learners (classroom management). Concepts learned during teacher training are not connected to the concepts in the textbook "Lack of in-service training for LO. Only in-service training in subjects such as maths or accounting."
Teacher 4	"No, I have never been to a LO course. Never in the three years that I've taught; I have not been given a course to do in LO."

4.5.5 Theme 5

Negative attitude towards subject/low-status subject/Teachers are uninterested in teaching LO	
Teacher 1	"Schools don't place necessary importance and emphasis on LO. Levels of interest and interaction are quite low."
Teacher 3	"Got classes as a result of subject divisions." "Learners are not interested in their work - shows little involvement.
Teacher 2	"Learners often have a negative attitude towards LO because it is a prerequisite for them to do it and they feel it's boring."
Teacher 4	"It feels like this subject is just a 'by the way' subject. That's how many teachers see the subject, 'anyone can teach LO'."

4.5.6 Theme 6

Lack of school management/Poor leadership	
Teacher 1	"Whoever has a gap in their timetable, whether trained or not, passionate or not passionate, will teach LO."

	"No principal is going to give a maths class to someone who is trained in Geography, because that person is not trained for maths. Why are we giving LO to someone who is trained in other subjects?"
Teacher 3	"… only comes to school for grade 12's. Receives information via subject head."
Teacher 2	"Unfortunately, I have not yet had contact(via) the visit of a subject advisor."
Teacher 4	"The subject advisor usually comes for the grade 11's and 12's. In any case, if she comes to the school, I never see her."

4.5.7 Theme 7

Overemphasis of topics	
Teacher 3	"Too much emphasis on education about relationships in LO textbook."
Teacher 2	"Not enough environmental concepts are covered in the LO CAPS curriculum. Need more detail."

4.5.8 Reflection on Challenges

Teachers overall believed that it is important to promote EE in schools although they mentioned that CAPS expect them to do a lot. Teachers also spoke about the extra workload they have and that they are busy with their normal day-to-day school activities. Teachers did not explicitly mention the value or the importance of EE but, rather their worries about the extra workload, because they were already very busy; the cost of promoting EE activities, such as waste-paper recycling, outweighed the benefits. Teacher one perceived EE as necessary only in the Further Education and Training (FET) phase as an elective subject so that more attention is paid to the environmental crisis.

Time constraints seems to be a major problem when implementing environmental concepts in LO. Teachers mentioned that time was a challenge and this is noticed in

EE research in other countries as well. Gough and Robottom (1993), in discussing the implementation of a social critical curriculum, highlighted that it would be difficult for teachers to modify their existing timetables in order to ensure EE policies are practically achieved. Marco (1998) in his study mentions challenges such as lack of preparation time and lack of time in the school day. For LO, CAPS only makes provision for two periods per week. Too much work needs to be done, according to teachers, in those two periods. The CAPS curriculum does not provide space for practical activities with regard to teaching learners about the environment, which has a practical component (DBE SA: 2011).

The themes that contain EE linked activities within LO, that is, development of the self in society, only get 10 hours teaching and health, social and environmental responsibility only gets seven hours of teaching in the forty weeks per year. Two hours per week is allocated to LO of which one of those periods is for physical education and the other hour has to be split between the other four themes as per CAPS Policy document (DBE SA, 2011: 9). This clearly shows that there is not enough time to teach learners about the environment in LO making it impossible for practical activities to take place.

Poorly resourced schools as discussed earlier in the chapter (contextual profile of schools) could pose a major challenge to teachers when implementing environmental concepts in LO. The locations of two of the schools are in low-income housing areas whereas one school is in a middle/high income housing area. The unequal distribution of resources could make the teaching of environmental concepts difficult in LO. Teachers also had the following to say about poor resources: Teacher one said that the school does not have a teachers' guide as a resource. Even though teacher one and three are at the same school, they do not discuss what they teach or share their experiences with each other. This lack of communication between LO impact on information sharing for effective implementation of environmental concepts in LO in grade 9. This correlates to the study done by Reddy (2000) about micro-politics among teachers.

Teachers did not receive training to teach environmental concepts in LO. This can be related to Macro (1998) and Ham and Sewing (1988) who argue that EE processes

and practices are fairly new to many teachers and a lack of EE knowledge is not uncommon in many countries. As described by Gous and Roberts (2015) LO consists of a variety of disciplines and it cannot be expected of a LO teacher to have experience or training in all disciplines. Swarts et al. (2015: 100) contend that inadequate professional knowledge and training for LO could result in teachers neglecting addressing social and environmental concerns. Another reason for limited teachers' and in-service training could be due to many teachers having received their teaching qualifications prior to the introduction of LO in 1998; training provided at the time was "short and fragmented" as noted by Gous and Roberts (2015: 73).

The negative attitude towards LO comes from principals, colleagues and learners as noted by (Gous and Roberts, 2015). There is the belief that LO is not an academic subject and that anyone can teach the subject as highlighted by Gous and Roberts (2015). It is also noted in Gous and Roberts (2015) that a proportion of learners do not realise how important LO is for them while attending school. Similarly, Swarts et al. (2015,99-100) noted that "LO was and still is not well received by learners or by those teachers who are entrusted with the responsibility of teaching it." Jacobs (2011) contends that learners' interest in LO is diminished by teachers' attitude towards the subject.

Teachers believe that principals are not paying much attention to the subject LO and get to teach LO only if there is a gap on the timetable. Reddy (2000) in his research mentions that successful implementation of EE is possible where the principal is cooperative to curricular innovation. Lack of involvement from the Department also raise concerns, as mentioned by one teacher. Curriculum advisors come to school for grade 12 learners only and do not pay visits to the other grades at school. Gous and Roberts (2015: 72) also mention that school principals' bad attitude towards LO can determine the status of the subject in the school to a large extent. This could pose a challenge for the successful implementation of LO in grade 9.

Some topics in the CAPS curriculum are repeated and overemphasised. Teacher two feels that not enough EE is included, whereas teacher three feels that too much emphasis is laid on topics. Teacher three mentioned relationships, HIV/AIDS, etc. as such topics that are overemphasised. Gous and Roberts (2015) argue that topics and

themes themselves are not the origin of sensitivity, but rather classroom discussions where personal issues are addressed that come close to certain learners' experiences.

4.6 OVERCOMING CHALLENGES

Teachers gave the following ways of how they managed to overcome some of these challenges mentioned above. Although teachers have several challenges that obstruct them from teaching environmental concepts in LO, they do have their ways of overcoming challenges in the classroom.

4.6.1 Theme 1

Heavy workload	
Teacher 3	Teacher leaves some parts of the LO textbook (curriculum) and lets community workers do the psychological and social work with the learners.

4.6.2 Theme 2

Time constraints	
Teacher 2	"Time in curriculum is important."

4.6.3 Theme 3

Lack of resources	
Teacher 1	"When I started teaching, I sort of just got this textbook as teacher's guide and I had to make the best of it."
Teacher 3	"Call a friend (ask colleagues for assistance). "At the moment, teaching method, textbook and exercise book and the blackboard. I normally display learners' posters on the wall."
Teacher 2	"Have Internet so we have access to Youtube videos for them. We have access to show them pictures on the projector."
Teacher 4	I have my teachers' guide that helps and work schedules, examples of

	it and for me it helps a lot. I make use mostly of the writing board. If I had better resources, and maybe took them for outings and such things."

4.6.4 Theme 4

Limited teacher training/in-service training	
Teacher 1	"I will do research on my own and whatever I think needs to be added."
Teacher 2	"There are lots of things in their textbooks that I myself do not know, which I have to learn from the start. I am also learning new concepts out of it as I didn't have training of it before."
Teacher 3	"I leave sensitive parts such as Health Education for community workers, doing mainly psychological work and social work."
Teacher 4	"…and I can only say that through the years I became confident to teach them and now I know their 'nicks' and 'tricks' and so on."

4.6.5 Theme 5

Negative attitudes towards LO	
Teacher 1	"I actually quite enjoy teaching it and improve my own knowledge of the subject whether I have been trained to do it or not."
Teacher 3	"But what I normally do, or intend to doing at the moment, is to display learners' posters on the walls. So that it at least be an incentive for them at the end of the day where they can say, 'my work is on show, there's interest shown in my work', and those kind of things."
Teacher 2	"I try to make it interesting as possible because I feel there is actually a lot of importance in it."
Teacher 4	"I like it and for me when the kids come into the class, I want to create their own little world for them and we talk about anything even though the lesson is finished and everything is done."

4.6.6 Theme 6

Lack of school management / Poor leadership	
Teacher 1	"I think schools should place a higher emphasis and more importance on the subject so that the kids can take it more seriously and be more interactive and participate better."
Teacher 4	"I usually ask for help from my subject head."

4.6.7 Theme 7

Overemphasis of topics	
Teacher 3	"I usually leave those parts for community keepers, doing mainly psychological work and social work at the school." They would talk to the females about some parts."

4.6.8 Reflection on overcoming of challenges

Teacher three leaves some topics to health educators from outside, which helps reduce the heavy workload of the LO CAPS document. The heavy workload that CAPS requires remains a challenge for these teachers as they can do only so much to teach the subject LO. Swarts et al. (2015) further argues that integrating EE with LO comes with difficulty as CAPS presents a content reference approach to social and environmental concerns as the foundation of learning.

To overcome time constraints, teachers plan their lessons and activities in advance (See appendix 12-16). Teacher two mentioned that time in the curriculum is important. It gave me an indication that teacher 2 is putting in some effort to over time constraints. Teacher two does the following to overcome this challenge: Divide lessons into different parts in order to cope with the minimum time to teach LO.

Addressing learners' individual needs remains an overall problem also noted by Gous and Roberts (2015), as two periods per week is not enough to teach environmental concepts in LO due to "given time frames in which to cover course material" (DBE SA, 2011: 9) also highlighted by Swarts et al. (2015: 102).

Teachers overcome some of the challenges by either doing research on their own or making use of the resources at hand, such as the teacher's guide (teachers one, three & four) or the Internet (teacher two). Teacher three also consults with LO teachers from other schools to ensure receiving up to date with information concerning LO since the Curriculum Advisor does not provide enough information to grades, except, grade 12.

Teachers are empowering themselves (teacher one) in teaching LO through self-study/research. Teacher three makes use of outsiders who are professionals in the field of health education to teach learners about sensitive topics regarding health issues.

Teachers in this thesis show positive attitudes towards the teaching of environmental concepts in LO. Negative attitudes towards LO could be eradicated if teachers themselves have a positive attitude towards the subject and Gous and Roberts (2015: 76-7) propose five imperatives that could help teachers to overcome the challenge of negativity towards LO:

1. *Prepare yourself academically*
2. *Take your role as LO teacher seriously*
3. *Prepare yourself mentally through metacognitive reflection*
4. *Convince learners, colleagues and the principal that LO is a critical component of the school curriculum.*
5. *Network with fellow LO colleagues, parents and support staff.*

Teachers in this thesis are aware that their principals do not think highly of the subject and it seems that these teachers do in some way take the lead with the LO. It is also evident that teachers want school management to take LO more seriously, as they envisaged it as a possibility to teach environmental concepts in LO to grade 9 learners.

As mentioned under the challenges, some topics such as, relationships, HIV/AIDS, etc. are overemphasised as per teacher three. Teacher three overcome this challenge by letting professional members of the community come to the school and assist with these topics that seem too sensitive for to teach. Other teachers in the study did not really mention this theme as a challenge. Teacher three mentioned that these sensitive topics in LO are easier taught by younger teachers and it is difficult to teach LO when a person (teacher) is older.

4.7 EMERGENT THEMES FROM OBSERVATION DATA

The following themes emerged from observation in the class. Observation data were linked to the interview data to see if teachers do what they say they do. These themes are linked to teachers' understanding of the requirements for implementing environmental concepts in grade 9. Observation took place twice within the classroom (observation 1 and 2) and themes are presented under one discussion. room. Data presentation is linked to the sub-questions of the main research question.

> *How do teachers understand the required implementation of environmental concepts in LO?*

4.7.1 Theme 1

Limited discussion on environmental concepts	
Classroom observation 1	
Teacher 1	No in-depth discussion of environmental concepts (sustainable development). Teacher-centred learning approach using ask and answer method.
Teacher 3	The teacher spoke about the concept SD and also explained the concept to the learners. He gave learners an activity at the end of the lessons about environmental and community issues in which the environmental concept SD was included.
Teacher 2	Teacher used a Youtube video and PowerPoint to present lesson. Video was related to the environment. She spoke about rhino poaching and pollution in general.

Classroom observation 2	
Teacher 1	Four questions were given on a worksheet to learners, who had to respond by giving the correct answer. Real-life examples - Teacher uses real-life example of community services.
Teacher 3	The teacher established a link between social and environmental organisations within communities.

4.7.1.1 Reflection on Limited Discussion on Environmental Concepts

Teacher one: With a Bachelor of Commerce (B.com) degree qualification, this spoke of the environment from an economic perspective. Economic understanding of the environment was mentioned, "The gap between rich and poor. A link was also made between the community and the environment (Teacher two spoke about individuals who help change communities. During observation one, teacher one spoke throughout the class. Observation two took place outside and learners presented topics of the activity they did to each other.

Teacher two: In the theme, Health, Social and Environmental responsibility, the environmental concept Permaculture is included. I observed, the teacher did not mention anything about the concept, although learners' textbooks were opened on that specific page.

Teacher three: Teacher touched on the concept SD, but not in detail. The concept SD was included in learners' activity. Lesson took place in a classroom that consisted of some Biology posters. No practical components were included in this lesson.

Teacher four: Teacher spoke about SD, but did not give any examples. Teacher four basically assisted learners to give answers to questions.

Both observations of individual teachers included the same topic and lecture approach was the dominant teaching style. Teacher one changed her approach from lecture method in observation one to discussion and presentation in the observation two.

4.7.2 Theme 2

What possibilities do teachers envisage for implementing environmental concepts in LO?

Limited Possibilities Used to Teach Environmental Concepts in Life Orientation	
Classroom observation 1	
Teacher 1	Lecture approach was used to teach learners about SD. Real-life examples were used to present the environmental concept SD.
Teacher 3	Teacher made use of real-life examples to bring the concept closer to the learners' understanding. Ask and answer method was used through discussion.
Teacher 2	Teacher made use of the projector, PowerPoint presentation, videos as well as textbook to teach learners about volunteer organisations.
Teacher 4	Teacher used real-life examples in learners' community. She mentioned in the interview she used the story-telling/anecdote method to teach learners.
Classroom observation 2	
Teacher 1	Lesson was held outside in the school garden. Learners looked more comfortable than in the classroom. Learners presented their activity (homework) about volunteer organisations.
Teacher 3	Teacher used real-life examples in learners' community. Activity sheet was used as teaching resource instrument at the end of the lesson to evaluate learners' understanding of environmental concepts in LO.
Teacher 4	Learners stood in front of the class and presented their answers to the rest of the class. (See appendix 15 - Activity attached)

4.7.2.1 Reflection on Limited Possibilities Used to Teach Environmental Concepts in Life Orientation

Teacher one made use of the lecture approach when teaching learners about the environmental concept, SD. Teacher one also made use of discussion to teach environmental concepts in LO. Teacher one conducted the second class outside the classroom to teach SD as an environmental concept in LO for grade 9. I view this as an attempt to include the approach 'Education In and Through the environment' as described by Fien (1993) because it could lead to learners contributing to the development of caring for the environment.

Teacher two used the lecture method by asking questions and learners answered these questions. Learners took part in a general discussion of environmental concepts under "volunteer organisations" (DBE SA, 2011). An attempt was made to teach learners about the environment through EE approaches as learners had to undertake a project that entailed going out to volunteer organisations within the community. This attempt falls under 'Education about the environment' as outlined in chapter 2 by Fien (1993).

In teacher three's class, I observed learners having a general understanding about environmental and community issues and this was noticeable in their presentations back to the class. This falls under the approach 'Education about the environment'. Cooperative learning (group work) was the dominant method used. Real-life examples as a teaching method to teach environmental concepts in the classroom were mentioned.

Teacher four used the lecture method by means of topic approach discussion. Story-telling was not used for this particular lesson as the teacher mentioned this in the interview. No attempt was made to include the approaches to teaching EE in LO, even though it was mentioned in the interview.

Overall, I observed that teachers tried their best to teach environmental concepts in LO. There were attempts to teach environmental concepts using the approaches to EE, but since EE has a practical component, it remains a challenge for these teachers.

4.7.3 Theme 3

What challenges, if any, are teachers facing when implementing environmental concepts and how can teachers overcome them?

Challenges teaching environmental concepts	
Classroom observation 1	
Teacher 1	Learners ask teacher: How is paper made from tree to paper? Teacher did not answer learner.
Teacher 3	Learners were overall well-behaved with their textbooks opened in front of them.
Teacher 2	Teacher spoke to a learner about twice. She took about 16 minutes to start the lesson. Learners came to the class in their own time and then they also had to be disciplined. Learners were not evaluated, but they received an activity for their next lesson.
Teacher 4	Interest level of learners seems low.
Classroom Observation 2	
Teacher 1	No one did their homework as most of them asked each other for answers. Learners seem confused about the activity. Learners lack involvement in activity.
Teacher 3	Lack of resources. Not all learners have textbooks.
Teacher 4	Some learners are laughing when teacher spoke about a soup kitchen as part of volunteer organisations.

4.7.3.1 Reflection on Overcoming Challenges

Teacher one: One learner asked a question and the teacher could not answer. The lack of training in LO seems evident. Managing the classroom is also a challenge for teacher one.

Teacher two: Too much time devoted to classroom management. It is a challenge that might make it difficult to implement environmental concepts in LO.

Teacher three: Class seemed well-behaved and teacher looks comfortable managing his class. A lack of resources could make it difficult to implement environmental concepts in LO as limited resources seem to be available.
Teacher four: Lack of understanding of the dimensions of the environment. Lack of resources as not enough textbooks were available. I observed challenges such as a lack of training, lack of resources and undisciplined learners. I observed teachers experience the challenges as mentioned during the interviews. Other challenges that emerged during observation in the classroom, is the lack of classroom management skills. This poses a challenge that could influence the way in which teachers teach environmental concepts in grade 9 LO. In the next section emergent themes form artifact data will be presented.

4.8 EMERGENT THEMES FROM ARTIFACT DATA

Analysis of the artifacts together with document analysis were done to see how teachers cope with the requirements to implement environmental concepts in LO. An artifact rubric (see appendix 11) was developed in order to explore teachers' engagement with the LO CAPS curriculum. The following elements were used as artifacts and developed as themes in this research study:

- Lesson plans of teachers (see appendix 12 and 14)
- Posters in classroom (see end of this section)
- Resource availability (interview and observation data)

4.8.1 Theme 1: Lesson Plans

Teacher one: No evidence of lesson plans presented.
Teacher three: Evidence of lesson plans. Teacher had a timetable (daily) in which all the work to be covered with learners was included. The environmental concept, SD to be covered were also included on the timetable.
Teacher two: Evidence of lesson plans presented. Teacher made use of a PowerPoint presentation. Some aspects of the topic: Health: Social and environmental responsibility, which included different types of volunteer organisations, were covered. Concepts related to the environment were, however, were not mentioned or discussed.

Teacher four: No evidence of lesson plans exists.

4.8.2 Theme 2: Posters

Teacher one: No posters were visible in the classroom; the second class was conducted outside in the school garden.

Teacher three: Evidence of LO and EE posters seen in the classroom (see end of section).

Teacher two: Posters of EE is visible within the classroom (see end of section).

Teacher four: Evidence of LO posters in the classroom (see end of section).

4.8.3 Theme 3: Resources

Teacher one: Learner textbook and activity sheet used for lessons as only resources. No other resources available for teaching environmental concepts in LO.

Teacher three: Activity sheet was used along with textbook as only resources. No other resources were available to teach environmental concepts in LO.

Teacher two: Learner textbook, activity sheet, Youtube videos and PowerPoint presentation used as resources for lesson. The visibility of other resources to teach environmental concepts in LO has been noted.

Teacher four: Activity sheet was used, textbook and blackboard as resources to teach environmental concepts in LO. No other resources were visible.

4.8.4 Theme 4: Is the word environment mentioned?

In both observations the word environment was mentioned by all teachers.

Teacher 1	Yes
Teacher 3	Yes
Teacher 2	Yes
Teacher 4	Yes

4.8.5 Theme 5: In what context are environmental concepts used?

Teacher one: Learners received an activity about the concept Sustainable Development. They had to answer four questions about the condition of their home environment and school environment. In observation two the class was conducted outside in the school garden.

Teacher three: Learners took part in an activity in which they had to answer questions about a community/environmental issue (both classroom observations).

Teacher two: Lesson plan - On the PowerPoint presentation the teacher used the following heading: Health, social and environmental responsibility: Different types of volunteer organisations.
Posters visible: “Ecological state of Cape Town rivers”
“Card of Community facilities for waste”
“Begin recycling, save your world”
Videos - “Making a world of difference”
“You can be a hero too”
Activity – Google Charity organisations

Teacher four: Teacher wrote activity on blackboard for learners. Activity included concepts such as, social health, environmental health and sustainable development (both observations).

4.8.6 Theme 6: What are favoured teaching methods / approaches?

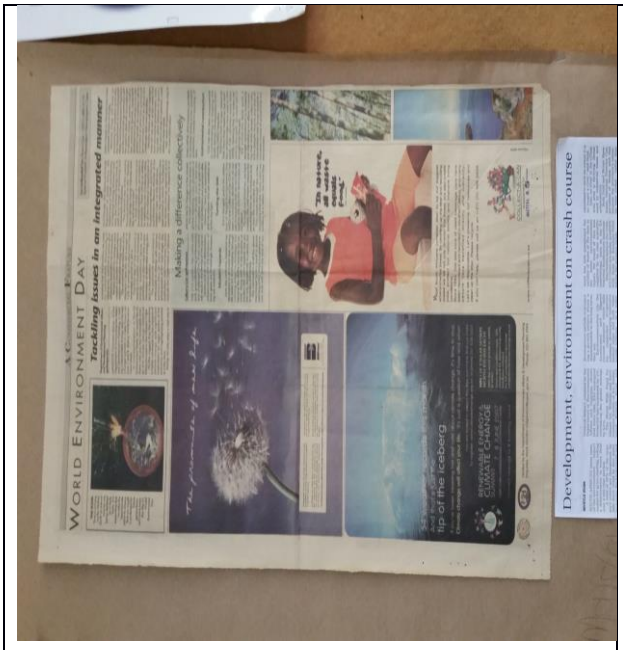
Teacher one: Used lecture approach as well as discussion. Lesson outside the classroom included ‘Education In and Through the environment’.
Teacher three: Use of lecture approach and ‘Education about the environment’ through group work. About the environment (group work), For the environment (discussion)
Teacher two: Used the lecture method by asking questions for learners to answer. Learners undertook a project and this fell under ‘Education about the environment’.

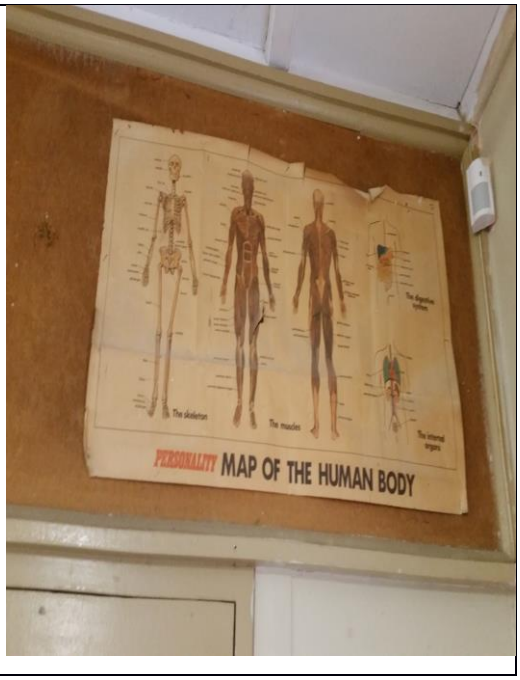
Teacher four: Lecture approach method. No approach to teach environmental concepts was included.

4.9 ARTIFACTS EXAMPLES

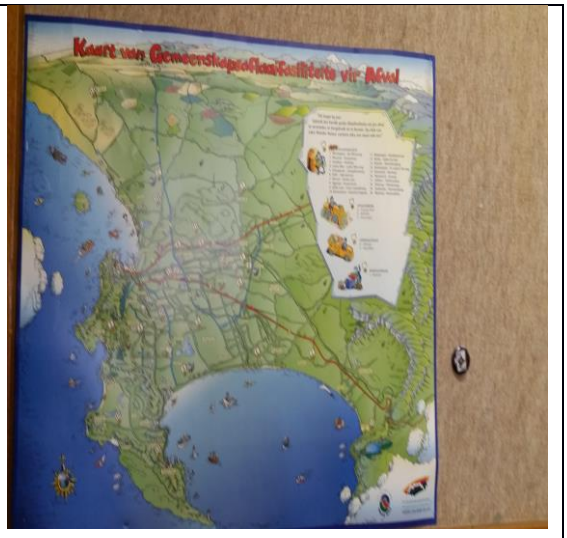
Teacher one: Second lesson was conducted outside

Teacher three: Classroom consisted of posters related to LO and the environment

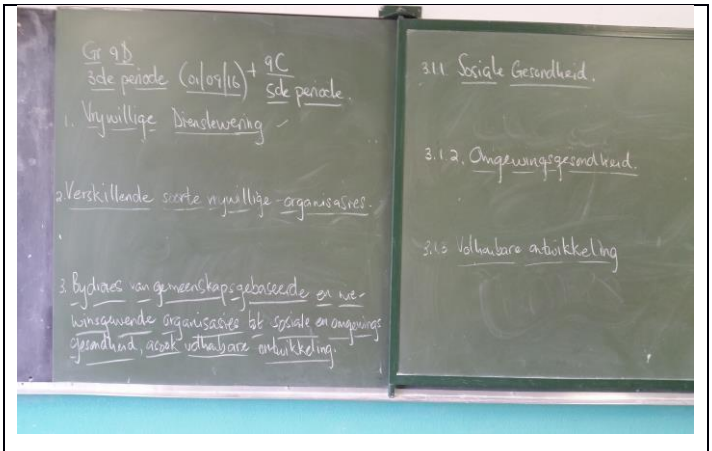




Teacher two: Classroom consisted of posters related to LO and the environment



Teacher four: Made use of the writing board as method of instruction to conduct lesson.



4.10 FOLLOW-UP INTERVIEWS

The follow-up interview came about two months after the first interview. Teachers were informed of this interview when the initial interview was done. I compiled questions for the follow-up interview in order to know about teachers' future prospects regarding LO. Overall, teachers were unsure if they would teach LO again. Questions were directly linked to the first interview with individual teachers.

4.10.1 Interview questions:

Question one: Will you teach LO next year?

Teacher one: "Not sure if I will teach LO for grade 9 in 2017. Principal might ask another teacher to present LO for grade 9."

Teacher three: "Not sure if I will teach the same subject again next year."

Teacher two: "Not sure if I will teach LO in 2017. Might be teaching Afrikaans."

Teacher four: "Not sure if she will teach LO in 2017."

Question two: Any planning for 2017?

Teacher one: "Class division takes place the last day of school in the fourth term; then we plan who will teach what."

Teacher four: "Planning for 2017 is in progress."

Teacher two: "No planning for 2017."

Teacher four: "No planning for 2017 yet."

Question three: Will you use the same teaching methods to teach environmental concepts in LO?

Teacher one: "I will use the same method for teaching environmental concepts, class discussion. I do not do a lot of planning for LO. I will let you know."

Teacher three: "I will use the same teaching method."

Teacher three: "Yes."

Teacher four: "I will use same method to teach environmental concepts, but will add practical activities."

Question four: Where did environmental problems originate?

Teacher three: "Today deforestation takes place. It all starts (at home). There is no respect for Nature. Family values changed. Biophysical problems started with greediness of people. They would rather pay fines then adhere to the rules that protect Nature."

Teacher four: "Environmental problems started because there is no respect for Nature."

Question five: Did any excursions take place?

Teacher three: No field trips took place for LO, School does not have finances.

Teacher two: No excursions took place for LO.

Teacher four: No excursions took place for LO.

Question six: Did you get the teacher's guide?

Teacher one: No teacher's guide.

Teacher three: Teacher's guide was not purchased.

Teacher two: Have a teacher's guide.

Teacher four: No teacher's guide.

Question seven: Did the curriculum advisor come to school?

Teacher three: Curriculum advisor did not come to school

Teacher two: No contact with curriculum advisor.

Teacher four: Curriculum advisor did not come to school.

Question seven: Are the posters of learners' work on the walls?

Teacher one: No posters on walls.

Teacher three: Posters of learners not on walls due to renovation at school. I did not get to that.

Teacher two: Posters on wall.

Teacher four: Posters on wall (role models)

Question eight: Any LO in-service training at the school?

In-service training did not take place for LO as per all four teachers in this thesis.

4.11 COLLECTIVE REFLECTION OF THEMES (CROSS-CASE)

Themes were formed through the data collected in this thesis. Themes highlighted that teachers' understanding of the required implementation of environmental concepts in LO seem to be limited as they have a narrow understanding of what EE is and how it should be implemented in LO. Teachers do have a positive outlook on how to implement environmental concepts successfully in LO, but face various challenges that restrict them from doing so. Teachers mentioned a heavy workload, time constraints, lack of resources, limited teachers' training, negative attitude towards LO, lack of school management as well as the overemphasis of topics in the CAPS policy curriculum. These challenges restrict teachers from successfully implementing environmental concepts in LO in grade 9.

The challenges highlighted above could hamper the implementation of EE pedagogies in the learning area LO. These challenges are similar to those highlighted by Swarts, et al. (2015). It is thus evident that teachers experience the same challenges as they did with NCS 2002 (CAPS, 2011) and these/similar challenges are well documented in other countries as outlined in chapter 1. Swarts et al. (2015) state that "LO as a subject under the past curriculums (C2005, RNCS), and present curriculum (CAPS), is not well received by those teachers who are entrusted with the responsibility of teaching it. Teachers of today still struggle with how best to educate the adults of the future with appropriate life skills knowledge, values and attitudes with regard to real-life concerns." Jacobs (2011) also reveals that learners' interest in LO is dampened by the teacher's attitude towards this subject. The effectiveness of LO as outlined in the CAPS policy document therefore seems to be doubtful as argued by Jacobs (2011, 211); Prinsloo (2007: 155); and Van der Walt and De Klerk (2006: 175).

How LO teachers interpret the CAPS requirements curriculum is very important in order to ensure learners' needs are met with regards to knowledge and skills as outlined by the Department of Basic Education (SA, 2011).

4.12 SUMMARY

This chapter presented the preliminary findings and analysis based on the problem statement, research questions and literature review presented in chapter 2. Information regarding the contextual profile of schools, teachers' LO teaching practices as well as their biographical information and qualifications was given. Information regarding teachers' perspectives around the implementation of environmental concepts was given. Data emerged from semi-structured interviews, observation in classrooms, artifacts as well as the CAPS Policy document. From the data that emerged, it is evident that teachers are experiencing difficulties implementing environmental concepts in LO using the CAPS policy document.

In the next chapter the presented data that emerged during this chapter will be discussed and interpreted according to the research question by using the relevant literature as presented in chapter 2.

CHAPTER 5

DATA DISCUSSION AND FURTHER ANALYSIS

5.1 INTRODUCTION

In the previous chapter, data were presented and arranged in the form of themes that emerged from the data related to the research question. A reflection on the main themes was given, divided into the requirements of the CAPS Policy document and how teachers deal with the requirements, the opportunities available for teachers, the challenges they face when implementing environmental concepts in LO and how they plan to and overcome them. In this chapter, an analysis of the themes will be discussed and interpreted further in terms of the literature reviewed for this thesis.

Kelly (2006: 360) argues that "a good interpretive account shows what the world is like from a particular perspective, while drawing at the same attention to its status as a perspective." In this case the teachers' perspectives of the implementation of environmental concepts in LO are presented and analysed based on the research question and the sub-questions developed for this thesis.

5.2 THE RESEARCH PROCESS: AN OVERVIEW

5.2.1 Title of the Thesis

An investigation into teachers' perspectives on the implementation of environmental concepts in Life Orientation in Grade 9: A Western Cape case study.

The whole thesis represented a nested case (implementation of environmental concepts – broader case). Each school represented a case in the broader case study (implementation of environmental concepts in LO). The case elements were

1. *Contextual profile of schools*
2. *Participants' biographical details and qualifications*
3. *Teachers' EE practices in LO in grade 9*

5.2.2 Research Question

The following research question and its sub-questions were answered during this thesis. The research question formed an important part of the research project and was incorporated into the interview as well as observation schedule.

Main research question

> *How are teachers implementing environmental concepts in the Life Orientation curriculum in grade 9?*

Sub-questions

1. *How do teachers understand the required implementation of environmental concepts in LO?*
2. *What possibilities do teachers envisage for implementing environmental concepts in LO?*
3. *What challenges, if any, are teachers facing when implementing environmental concepts and how can teachers overcome them?*

5.2.3 Methods of Research

Data were collected through the following:

- An interview schedule with semi-structured questions to allow for open-ended answering
- An observation schedule checked during classroom observation
- Artifacts that include proof of learners' tasks assessments, posters within the classroom related to LO and EE. Lesson plans of teachers and other proof of teachers' engagement with the subject LO.
- An analysis of the LO CAPS policy document.

5.2.4 Statement of the Problem

This thesis was written in response to reports that the introduction of EE in different subjects and formal curricula in general has been shown to cause problems for teachers, as stated by Walker (1997) and Lee (1998). A lack of knowledge, confidence and pedagogical skills are all issues which obstruct teachers to implement the curriculum successfully. This thesis is expounded to those problem areas, particularly the implementation of environmental concepts within the LO curriculum.

The exceedingly prescriptive nature of CAPS does not allow teachers flexibility to add to their teaching instruction and classroom practices. In a sense this provides a conflictual situation, which authors such as Swarts et al. (2015) highlight as a problematic situation for LO and its EE components in particular.

This is illustrated by Swarts et al. (2015) who contended that integrating EE with LO will be difficult based on the following four reasons:

1. CAPS introduces a content reference approach to social and environmental concerns as the foundation for learning;
2. There are given timeframes in which to cover the course material on social and environmental concerns;
3. Adherence to departmental regulations regarding summative assessment is required (SA DBE, 2011: 33), which favours a teaching-to-the-test-or-examination paradigm; and
4. The role of the LO teacher in developing learning activities is not clearly spelt out.

5.3 SUMMARY OF FINDINGS

5.2.5.1 Curriculum implementation: Teachers' Perspectives

How do teachers understand the required implementation of environmental concepts in LO?

Data emerged from semi-structured interviews, classroom observations and artifacts. From the data that emerged, it is evident that teachers are experiencing difficulties implementing environmental concepts in LO, which is in contrast to the requirements as laid out in the CAPS Policy document. One of the main problems emerging is that there are often no specialist teachers for the subject LO. The broad themes do not fit in with the disciplinary specialisations that the subject spans. So, teachers as indicated in this thesis do not have the disciplinary knowledge to present the subject confidently and comprehensively. Shulman (1987) indicates that content, pedagogical and curricular knowledge required by teachers are often not in place as these are not covered by teacher education programmes. The combinations of disciplines are also not available. So, the conclusion is that teachers are not suitably qualified to feel confident that they have the expertise to teach the subject. The teachers in this thesis indicated that they rather feel deskilled and disempowered and this is also noted by

Swarts et al. (2015). A similar finding is noted in Catling (2014) where he highlighted teachers' confidence in their knowledge and understanding of Geography. A challenge highlighted by Catling (2014: 34) was the decline in access to "good quality professional development."

School management often give the subject LO to any teacher who has a "gap" on their timetable, in order to fill it up, as noted by Gous and Roberts (2015). Teachers therefore do not have a wide repertoire of methods and approaches to teach the fairly complex subject combination. McLaughlin (1987), as indicated in chapter 2, argues that outcomes of even the best planned and supported policy initiatives depend finally on what happens as individuals throughout policy implementation interpret and act on them. As also highlighted by Swarts et al. (2015) environmental approaches require integrated approaches to teaching. They suggest that cross-curricular lenses are required to teach the complexity of issues as presented in the environment. Moreover, Swarts et al. (2015) suggest that approaches such as education in and through the environment as well as education for the environment (1987a). These approaches provide for learner-centred teaching, which involves learners in the teaching and learning processes.

The results in this thesis seem to indicate that teachers largely favour teacher-centred approaches and lecture methods. These require that students be passive and do not involve students in co-learning or research-type activities. Although group work is sometimes used, teachers do not do such collaborative work regularly. Problems associated with curriculum implementation and change are not restricted to South Africa, but also occur on an international level, according to Provenzo (Morgan, 2001: 1), who states that "education as a professional field is constantly changing." However, curriculum implementation in South Africa holds major implications for teachers who are not trained to teach a subject such as LO. Teachers interviewed complain of a heavy workload even though CAPS was originally developed to improve the classroom environment for teachers.

5.4 DISCUSSION OF RESULTS (CONSTRUCT ENVIRONMENT)

5.4.1 Theme 1: *Limited understanding of the required implementation of environmental concepts in LO*

Teachers' understanding seemed limited in terms of implementing environmental concepts in LO. Teachers' limited understanding could be linked to not being properly trained to handle the subject LO, which results in incompetent teaching of environmental concepts under the topic social and environmental responsibility and this was also noticed by Swarts et al. (2015). In addition to this, studies done by researchers such Rooth (2005). The root of the problem, according to Christiaans (2006) and Van Deventer (2009), is a lack of adequate epistemology and skills, which prevents teachers from effectively teaching curriculum material. Swarts et al. (2015) recommend that when teaching environmental concepts to students, teachers should combine specific contextual issues with practical learning activities. "It is thus clear that the effectiveness of LO as illustrated in the CAPS curriculum appears to be doubtful," wrote Jacobs (201: 212; Prinsloo, 2007: 155; Van der Walt and De Klerk, 2006: 175).

5.4.2 Theme 1a: *Limited understanding of the construct environment*

Fien (1995) mentions that the environment consists of four interrelated dimensions: biophysical, social, political and economic. Teachers did include some of these dimensions in their answers during the interview process and I have noticed that they were unaware of the multidimensional nature of the construct environment. Teachers did not reference (even indirectly) the dimensional nature of the construct environment. None of the teachers mentioned that the environment was a "product of human interactions and ecological processes" as stated by Fien (1993) and Reddy (2011). The apparent lack of understanding of the broader ideas related to the construct environment could be attributed to the limited presentation of EE in teacher education programmes and lack of in-service training provided.

Another factor influencing the lack of understanding of the construct environment or lack of making reference to the textbook definition could be due to teachers' specialisation field. Gous and Roberts (2015) identify the following specialisation

fields within the LO CAPS curriculum related to the environment. It is impossible to be specialised in all the fields.

- Development of the self in society: A teacher needs knowledge in Psychology as well as Sociology;
- Health, social and environmental responsibility: A teacher needs foundational knowledge in Biological and Environmental Sciences, coupled with Sociology;
- Constitutional rights and responsibilities / Democracy and human rights: Knowledge in Political Studies and Constitutional Law;
- Physical Education: Human movement Science; and
- World of Work/Careers and career choices: Career Psychology degree / knowledge.

Not many teachers will have these multiple qualifications that cover all of the abovementioned themes and specialisations.

5.4.3 Theme 1b and Theme 1c: *Dimensions of the environment (1b) and linking the dimensions of the environment (1c)*

Teachers' understanding in terms of the dimensions of the environment were analysed as a finding of this thesis and teachers were found to experience difficulty in linking the four dimensions of the environment. Teachers have limited environmental knowledge and background of EE.

- *The environment is only seen as a biophysical issue*

When teachers talk about the effect of greed causing environmental destruction they are aware of the impacts of human-nature interactions

Nothing is really said about human nature interactions and how the biophysical dimension actually sustains life of all organisms (Reddy, 2008). The biophysical dimension is based on diversity of living organisms and their interactions. This is believed to be life sustaining as many processes, example, photosynthesis, the water cycle, leads to replenishment of resources to sustain life. Teachers did not mention any of these processes and it could be inferred that their understanding is limited towards the environment as a biophysical issue.

- *The environment is only seen as an economical issue in theory but no practical link is made*

This dimension includes matters of money, jobs, security, development and poverty. The economic dimension was mentioned by teacher one who has a Bachelor of Commerce degree so it is possible for teacher one to make a link between the economic and biophysical environment.

- *The environment is only seen as a political issue*

Big corporations form deals with government and they then decide where to build and do developments like housing and shopping malls. The environment as a political issue was not mentioned by teachers. This could be attributed to the nature of the subject LO in the CAPS curriculum.

- *The environment is only seen as a social issue*

Social issues were mentioned by teachers as important environmental issues related to the subject LO. It would appear that they have a stronger understanding of environment in terms of a social context. This could be attributed to the nature of the subject LO as a subject in CAPS which does not deal directly with ecological, political and economic dimension of the environment explicitly but rather achieving the aim of, "using science and technology effectively and critically showing responsibility towards the environment and the health of others" (SA DBE, 2011: 5). Thus, 'the health of others', gives LO a social outlook to teachers.

Three teachers (teacher two, three and four) mentioned some social aspects of the environment and it can be linked to a limited understanding of the social dimension of the construct environment. Teacher four has a strong social background of the environment because her interview answers reverted back to the social aspect of the environment in terms of the biophysical dimension. However, teacher 4 has a broad geographical understanding of the environment and referred to *"how the seasons changed and is still changing."*

Teacher one and four mentioned some biophysical aspects of the environment and it can be linked to a limited understanding of the biophysical dimension of the construct environment. Teacher two has a Psychology degree and referred to LO as your

"psychology of school." This means that learners learn the basic life skills. Teacher three has some experience teaching Geography but no official qualification. Teacher one and four however, studied business related subjects. Teachers in this thesis are thus not qualified to teach environmental concepts in LO. In addition to the lack of training that takes place from outside in, Ontong & Le Grange (2014: 28), highlights the philosophical approach to the environmental crises as it cries out for a return to the inner self through connecting with nature (inside out). The CAPS curriculum specific aims do not clearly point out the four dimensions of the environment as it only refers to the environment as a whole. Teachers therefore perceive the environment as a construct relating to only what the CAPS document outlined (DBE, 2011: 9). Not enough environmental issues are covered in the CAPS curriculum and concepts are not discussed in detail in order for teachers to have a clear perspective of the different dimensions the environment is made of.

5.4.4 Theme 1d: *Causes of environmental problems*

Being aware of how and when environmental problems originated is important because most of these problems are manifested and visible within many locations and linked to a variety of causes as described by Reddy (2011: 11). It is noted by various authors such as Beck (1992), Capra (1983) and Le Grange (2004: 3), that the dawning of environment crises came as a result of modernism, which began in Europe in the 17th and 18th centuries. Reddy (2011) mentions that the root causes are often found in human activities that are harmful to the biophysical processes on our planet. Le Grange et. al (2011) further states that environmental issues often affect local communities.

Teachers in this thesis have a limited understanding of how environmental problems came into existence, as they could not provide the researcher with a definite answer. It was found that teachers have limited environmental knowledge. Teachers are exactly what Swarts et al. (2015) contends in his study, namely that, with "inadequate professional knowledge and training in EE, teachers might neglect addressing social and environmental concerns" when teaching learners about the environment. The researcher also agrees with Swarts et al. (2015) that CAPS has become the biggest obstacle due to its workload as it has restricted teachers' perceptions, experiences and emotions with regard to social and environmental concerns. It is therefore important

that EE aa a sub-field of education needs to be studied by teachers who are given the task to teach environmental concepts in LO.

5.4.5 Theme 2: *Carrier subjects of / for EE*

EE has its roots in subjects such as Geography and Biology (Verma and Pumfrey, 1993: 95) and these resulted in confusion around the inclusion of EE pedagogies in other subjects, such as LO. Three teachers have the perception that EE issues are part of Geography or Biology, but do see LO as a feasible subject for teaching about environmental concepts. These teachers seem to have the impression that EE is best served by subjects that have subject-matter knowledge or content that is linked to issues and problems of the environment. Notable subjects are Geography, Biology and Natural Sciences. The definition of Geography given by Von Richthofen (1883) cited by Fisher, Campbell and Miller(1969: 91), gives a clear indication that Geography is "the science of the Earth's surface and its causally characteristics and phenomena" and deals with environment and environmental issues. In Australia, for example, the environment and environment issues are included in Geography: "With the introduction of the National Curriculum Geography, the subject Geography was specifically included as a foundation subject to engage learners in studies of geographical themes, such as environmental concern (Catling, 2014: 29)". This reference also indicates that Geography is often viewed as a carrier subject for environment and environmental issues as it deals with human-Nature interactions. Cotton noted in his study that Geography is considered by some to be the ideal place for EE because of its long-standing focus on incorporating different attitudes and values as noted by Bailey (1974) and Naish et al. (1987). Other subjects such as Biology and Natural Sciences are similarly regarded as a natural 'space' for discussion of ecological processes and issues that arise in natural systems. These include issues such as pollution, biodiversity loss, deforestation, etc. Le Grange (2000), contends that in the 1970's environmental learning in the South African curriculum was primarily situated in the Natural Sciences. O' Donoghue (2007: 147) goes further and argues that environmental learning focused on nature at risk for which 'ecology provided the symbolic capital of concepts'.

This narrow perception of environmental-related subject leads to a limited understanding of EE. In such contexts LO is thus not seen as a suitable subject to

include EE and resulted in the EE topics being neglected by teachers responsible for teaching LO. Conversely, Catling (2014) argues that a subject's distinctiveness could become lost if it were to be integrated with other subjects as indicated in his research on the National Curriculum of Geography in Australia. This narrow perception of teachers that the environment is a geographical or science problem could be linked to their understanding that it should be taught with a practical approach. The revised South African school science curriculum advocates an inquiry-based approach to learning that encourages learners to "explore objects, situations and events in their immediate environment, to collect data and record information and draw conclusions accurately" (DoE, 2002: 34).

In contrast, Lee (1997) stated that in Hong Kong most schools tend to teach EE in the formal curriculum through either existing moral, civic or religious education programmes and in the informal curriculum, schools tend to organise such EE activities as visits to Nature reserves and urban and country parks, field trips, and competitions. Three teachers have the perception that EE issues are part of Geography or Biology, but do see LO as a subject for teaching learners about environmental concepts. These teachers seem to have the impression that EE is best served by subjects that have subject-matter knowledge or content that is linked to issues and problems of the environment.
Similarly, Ashley (2000: 269) shows that Science is regarded as a natural 'space' for discussion of ecological processes and issues that arise in natural systems. These include pollution, biodiversity loss, etc. Ashley (2000) argues that Science probably offers the strongest justification for the adoption of pro-environmental behaviours and policies. Science and Geography according to Fien (1993) are subjects associated with education about the environment.

To the contrary, the CAPS curriculum states specifically, "use science and technology effectively and critically showing responsibility towards the environment and health of others (DBE, 2011, 5); the LO curriculum's specific aim does not include a practical component and only states that learners should be guided to make informed and responsible decisions about the environment (DBE, 2011, 5 and 6). This poses a challenge teaching environmental concepts to grade 9 learners. EE is thus seen as a

geographical/biological problem and not an issue to be discussed in the subject LO. The focus should be on In or Through the environment, About the environment. In South Africa it is noted by De Vries (2005, 15) that the subjects Geography, Science and Biology have been situated in this category for an extended time. However, Fein (1993) cautions that the social changes are ignored in this approach to curriculum organisation.

5.5 POSSIBILITIES TEACHERS ENVISAGED

Research sub-question 2

What possibilities do teachers envisage for the required implementation of environmental concepts in LO?

The following teacher-centred approaches were seen by teachers as a possibility for teaching environmental concepts effectively in LO to grade 9 learners.

5.5.1 Theme 1: *Lecture approach to teaching environmental concepts*

Dominant teaching approach used by all four teachers was the lecture approach to teach environmental concepts in LO to grade 9 learners. This method was used in conjunction with other methods that will follow later in this chapter. Teachers tend to use this approach as a way of maintaining discipline within the classroom and this approach is well observed and researched by Flanders (1963) as teachers' way of keeping the class under control. It is noted by Flanders (1963) in Inamullah et. al (2008: 46), that about two thirds of classroom time is devoted to talking and that is, "lecturing, giving directions as well as controlling learners." It is therefore teacher-controlled and information is transferred from the teacher to learners, who are in this case passive listeners. However, Swarts et al.(2015) argues that teaching complex social and environmental issues to passive learners has the potential of isolating them from their local societal context. Lotz-Sisitka (2002: 114) adds to this and refers to it as 'learner-centred emptiness', and Le Grange (2007: 11) concludes and labels it as a lesson in hypocrisy, for it highlights awareness of environmental concerns above active involvement (Swarts, 2015: 100). This method is critiqued by educationists and according to Lord (2001) information transferred in such a way is irrelevant to learners and is mostly forgotten by learners. However, it is viewed by De Jager (2014)

as successful if it is applied in such a way that it engages learners in teaching activities. Gous and Roberts (2015: 66) noticed that the traditional lecture approach is not used extensively, except where concepts that are totally new have to be explained to learners.

5.5.2 Theme 1a: *Excursions (Education in or through the environment)*

The aim is to give learners the opportunity to observe new things, collect data and collect examples and to allow them to explore outside of the classroom. Observation is very important as it ensures effective teaching (Fraser et.al., 1990: 146). No education in and through the environment took place as excursions could afford learners first-hand experience. This kind of experience according to Fien (1993) could result in learners developing skills and knowledge as outlined in the LO CAPS policy document (DBE, 2011). Excursions did not take place due to a lack of funding as mentioned by teachers one, three and four.

5.5.3 Theme 1b: *Narratives/anecdotal storytelling (experiential) as teaching approach to teach EE successfully*

A common teaching method involving a direct transfer of knowledge from one person (the teacher) to another person (learner) (Fraser et al., 1990). Storytelling presents the purest form of the method and was used by teacher 4. Learners perceived the moral message in stories and benefit in this way as outlined by Fraser et al. (1990). The teacher used this method as a way of strengthening her position of authority ((Fraser et.al., 1990, 140). This method resulted in discussions as a learner-centred approach.

5.5.4 Theme 1c: *Videos/PowerPoint/Pictures/ Movies*

Teachers see the usefulness of teaching media to teach environmental concepts as a possibility for teaching it successfully. De Jager (2014: 130), sees it as a guide to add to the traditional textbook method, as the textbook does not always clarify concepts. De Jager (2014: 131) also points out that teachers should take careful note of possible offensive or sensitive scenes used in the classroom setting. Teaching media can be divided into two types, namely:

Visual media - PowerPoint /pictures

Both visual and written information can be transferred to learners (De Jager, 2014: 134). It is regarded as a very good method because it can be reused and revised as needed and enables the teacher to talk and face the class at the same time (Mills, 2003). Pictures, colourful headings and underlining attract learners' interest (Mills, 2003; Sugar, Crawley and Fine, 2004). Gravoso, et al. (2008) agree that teachers who use multiple media in their lessons can help learners to understand difficult concepts and encourage active learner participation, which is line with EE pedagogy teaching. Teacher two made use of PowerPoint to teach environmental concepts.

Audiovisual media - Video/movies

Including visual and sound elements although watching videos can have the disadvantage that learners see it as a mode of relaxation and not learning as argued by De Jager, 2014: 132). Teacher 4 said in her interview that letting learners watch movies was a good way to teach them about the 'social environment', for example, movies about drugs.

5.5.5 Theme 2

Learner-centred approaches used by teachers as a possibility for teaching environmental concepts in LO to grade 9 learners.

5.5.5.1 Theme 2a: *Discussion*

Making contact with each other to form a relationship with reality and involves more than just talk, because its focus concentrates on a specific theme. Discussion exists because humans have language abilities (Fraser, et al., 1990).

5.5.5.2 Theme 2b: *Group work (Education in or through the environment)*

This method is excellent in helping learners to understand new concepts while interacting with fellow learners while respecting each other's perspectives (De Jager, 2014: 51). Since learners are divided into small groups, it gives the teacher the chance to identify those learners with learning barriers (De Jager, 2014: 52).

5.5.5.3 Theme 2c: *Self-activity (Assignments, projects)*

According to Avenant (1988: 132), self-activity should comply with a number of basic requirements:

- The activity should pursue a clearly formulated objective.
- Pupils should be motivated to become actively involved.
- A clear problem to be solved through active learner participation should be formulated.
- Sufficient opportunity should be given for the development of the learners' creative abilities during activities.
- Individual differences should be taken into consideration during the planning of learning activities.
- Pupil activities should take place within the social climate of the classroom to allow development of understanding of others' points of view.

Assignments and projects are also examples of self-activity seen as possibilities by teachers. Assignments have a strong link with the vocational world and are therefore suitable for instruction during vocational training. The individuality of the learner is recognised, which enables the instructor to expect certain levels of performance on assignments (Fraser et al., 1990: 137). It is also noted by Fraser (1993: 137) that an assignment "contributes to the development of the learner's character and concludes that assignments can be related to evaluation."

Projects, on the other hand, can be used to evaluate certain skills ((Fraser et al., 1990). Teacher-centred and learner-centred strategies and methods proposed by Fraser, Loubser and Van Rooy (1993) and Trowbridge and Bybee (1996) can be utilised in the class where EE is presented:

- Questioning, including tests and examinations and teaching by peers
- Discussion, including group discussion, debates, stories, panel discussions, guest speakers, teaching by peers, oral reports
- Investigation and problem-solving
- Demonstrations
- Cooperative group work
- The experimental method, including exploratory learning, excursions, laboratory activities and projects.

5.5.6 Theme 3: *More effective LO training/In-service training*

The importance of training for teachers is noted by (Swarts, 2015: 101) as an important concern. “LO teachers with inadequate professional knowledge and training within the field of EE might neglect addressing social and environmental concerns through the intersections of their teaching-and-learning practices”.

Gous and Roberts (2015, 73), question whether a teacher can really be trained with a Psychology, Sociology, Political Science, Biological/Environmental Sciences and Law background as well as Human Movement Science in order to teach LO. This is a serious challenge for LO teachers as well as higher-education institutions offering LO subject education. Gous and Roberts (2015, 73) also contend that, since LO is a new subject, many of the teachers received their training prior to its introduction and the in-service training provided to them was not enough to empower them to teach LO.

5.6 CHALLENGES TEACHERS FACE

This was based on the research questions:

What challenges do teachers envisaged for the required implementation of environmental concepts in LO?

5.6.1 Theme 1: *Heavy workload*

CAPS entail more paperwork than NCS did and more topics have to be covered to successfully teach environmental concepts in LO. The following four reasons were observed by Swarts (2015, 102) as challenges to implementing environmental concepts in LO.

1. CAPS introduces a content reference approach to social and environmental concerns as the foundation for learning;

2. There are given timeframes in which to cover the course material on social and environmental concerns;

3. Adherence to departmental regulations regarding summative assessment is required (SA. DBE, 2011: 33), which favours a teaching-to-the-test-or-examination paradigm; and

4. The role of the LO teacher in developing learning activities is not clearly spelt out.

5.6.2 Theme 2: *Time constraint for teaching EE*

Teachers in this study gave time constraints as one of the challenges they had to deal with in teaching environmental concepts in LO. Time allocation to LO is two periods per week, of which one hour is allocated to Physical Education (SA, DBE, 2011; Gous and Roberts, 2015). So, there is no room left for teachers to successfully teach environmental concepts to learners. Time constraints seem to be a problem across various subjects in general. According to another study done in Hong Kong by Lee (2000, 104), some teachers were supportive of the EE programme (or activity), but hesitant because of time constraints. In his concluding findings Lee (2000: 105) mentioned that teachers from different schools believed that EE promotion might hinder their normal teaching and that they might not have adequate knowledge about EE and the ways of implementing the curriculum change. Ofsted (2011) and Iwaskow (2013) state that "Equitable time to teach Geography compared (with) other subjects, in part compounded by an integrated curriculum approach in which Geography's distinctiveness is lost."

5.6.3 Theme 3: *Lack of resources*

Lack of funds seems to be a major problem when it comes to putting EE in LO in action is suggested in this study. This was also noted in a study by Verma and Pumfrey (1993) in England. There, for instance, EE competed with other subjects in order to be allocated funds. It was also noted by Reddy (2000) that poorly resourced schools cannot cope with the schools that have better infrastructure and access to resource materials. Teachers in his research indicated that it would be easier for them to try new approaches if their schools were better resourced. It is evident from his research that schools in low-income housing areas experience a "lack of experience and outdoor work and learner-centred pedagogies (Reddy, 2000: 30).

5.6.4 Theme 4: *Limited teacher training*

An important finding is that teachers are not trained to teach environmental concepts in LO. Another important finding is that no in-service training exists for LO teachers as regards health and social and environmental responsibility. The training of teachers for LO is a major challenge faced by education departments. In this study, the training of teachers seems to be a challenge not in the hands of LO teachers. The following is noted by Swarts (2015: 101):

"LO teachers with inadequate professional knowledge and training within the field of EE might neglect to address social and environmental concerns through intersections of their teaching-and-learning practices." This coincides with Gous and Roberts (2015: 73) who question whether a teacher really can be trained with a Psychology, Sociology, Political Science, Biological Environmental Sciences and Law background as well as Human Movement Science in order to teach LO. Gous and Roberts (2015) argue that it cannot be expected of teachers to be trained in all of the above fields to teach LO.

Studies done in countries with regards to limited teacher training showed evidence of a lack of EE knowledge (Marco, 1998 and Ham and Sewing, 1988). Wade (1989) also found that EE in-service training is not a high priority since it brings forth an inter-disciplinary nature that contrasts with a conventional school curriculum that is strongly disciplinary.

5.6.5 Theme 5: *Negative attitudes towards LO/Low status subject*

Preliminary indications are that LO is struggling to achieve its potential, specifically pertaining to learners', teachers' and school principals' perceptions of this subject and its constituents (Kelly, Parker and Oyosi, 2001; Khulisa, 2000; Makhoba, 1999; Mashimbye, 2000; Rooth, 2001; Toddun, 2000; Wentzel, 2001). The close association LO has with the past so-called 'non-examinable' subjects, such as Guidance and Physical Education (Alexander, 1998; Dube, 1994; Makhoba, 1999; Mbokazi, 1999; Sitzer, 2001; Van Deventer, 2004; Wentzel, 2001), may be a lingering connection that detracts from the status and implementation of this subject. Student teachers report that LO is often seen as a 'free period' as noted by Rooth (2001), similar to previous perceptions of Guidance (Mashimbye, 2000) and Physical Education (Wentzel, 2001), prior to curriculum transformation.

Gous and Roberts (2015) found that schools' attitude towards LO is that any teacher can teach LO as it is not considered an academic subject. Gous and Roberts (2015) argue that LO is indeed a serious and compulsory subject with two sides. It is both academic and experiential, meaning it touches the mind, heart and body and this particularly contrasts with academic subjects, where the mind is predominantly involved. Another reason mentioned by Gous and Roberts (2015, 72) is that Higher Education Institutions do not allocate the same admission point to LO compared with other subjects when working out a prospective student's admission score. This perception reinforces the perception of teachers, learners and parents that LO is not a serious subject.

5.6.6 Theme 6: *Lack of school management/poor leadership*

LO is given to any teacher whose periods have not been filled. Teachers confirmed this in their interviews, indicating that LO is not considered to be a subject accorded high priority at their schools. Similar findings by Gous and Roberts (2015: 72) noticed that some school principals have a bad attitude towards LO, evident in their remarks about the subject. These remarks were also noticed in Higher Education Institutions, where LO was called a "dummy subject" (Gous and Roberts, 2015: 73). As mentioned in chapter 2 (Reddy, 2000), principals do not play a cooperative role when it comes to EE innovation and implementation. Also, the role of the curriculum advisors is non-amenable as teachers mentioned that they have never seen or met the curriculum advisor.

5.6.7 Theme 7: *Overemphasis of topics*

An overexposure of some topics to LO learners seems to be a major problem in some provincial education departments; for example, it is noted by Gous and Roberts (2015) that topics such as HIV/Aids prevention receive main attention in LO classes. Teacher 3 mentioned the same topics as an overexposure to LO learners and he does not feel comfortable teaching the subject due to this overexposure. Some principals prioritise, for example, physical education (Gous and Roberts, 2015: 72) and this can lead to social and environmental responsibility not being taught properly. Gous and Roberts (2015: 74) highlight that sensitivities may arise in classroom discussions where personal issues are addressed that come close to certain learners' experiences.

5.7 OVERCOMING CHALLENGES

Overcoming challenges in an already challenged environment is the biggest task of LO teachers in grade 9. Gous and Roberts (2015: 76) propose ways in which teachers can survive when implementing environmental concepts in LO. Gous and Roberts (2015: 76) say the following:

Firstly, LO teachers need to equip themselves academically through formal studies or through self-enrichment. This will help to overcome the challenge of limited teacher training as well as in-service training of individual teachers.

Secondly, teachers should take their role as LO teachers seriously and should regard LO as a highly important subject. Thirdly, teachers need to prepare themselves mentally through metacognitive reflection, and in advance.

Thirdly, teachers need to gradually convince learners, colleagues and the principal that LO is a critical component of the school curriculum by, for example, using personal examples of the worth of LO. This can help teachers overcome the negative attitude towards LO as well as it could change the low status of LO to a higher status. It can also support the teacher to have the school management involved if the status of the subject is changed.

Lastly, to network widely with fellow LO colleagues, parents and, and support service staff in order to make tasks easier. This will ease the challenge of the heavy workload of CAPS.

The other challenges, which are time constraints, lack of resources and the overemphasis of topics, remains out of the control of the schools. The Education Department is the main role-player here and should become aware of teacher viewpoints as produced in various studies, including this project focused on an aspect of LO.

5.8 SUMMARY

In this chapter, the findings were discussed as well as further analysis of the data as presented in chapter 4. These were all linked to chapter 2, which contains the literature relevant to this study, which is curriculum implementation and change, EE implementation and the subject LO. The data involved were based on the three research questions, namely teachers' understanding of the CAPS curriculum imperatives, possibilities teachers envisaged to successfully implement EE in LO as well as the challenges teachers experience and how they overcome these challenges.

It is clear that teachers struggle to implement environmental concepts in grade 9 LO. They are facing challenges over which they have no control as control is the hands of the Department. The Department has not provided teachers with the necessary tools to enable them to implement environmental concepts in LO.

The following chapter presents the conclusion and final recommendation for further studies in the field of curriculum implementation, EE implementation and the subject LO.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This thesis was focused on the implementation of environment-related topics in the LO subject as presented in the CAPS document for further Education and training phase of secondary schools in South Africa. Teachers' responses to the policy implementation are central to the enquiry and were documented and discussed and include their teaching approaches and experiences of implementation. The data were produced and developed from interviews with teachers, classroom observations and review of artifacts developed by teachers related to these teaching practices.

In essence, the study report presents an interpretive account of teachers' experiences of teaching the subject LO and particularly the possibilities and constraints they encountered in these processes. In this chapter the researcher presents an overview of the process, limitations of the study and some recommendations and suggestions to improve the teaching of environmental concepts in LO in grade 9 derived from the data produced. The main findings related to constraints and possibilities expressed by teachers are presented from the analysed data. Some recommendations for implementation as well as for further research are presented in the conclusion.

6.2 RESEARCH PROCESS AND METHODOLOGICAL REFLECTION

6.2.1 Gaining Access to Schools

This thesis involved three different high schools within the Western Cape region. Four teachers responsible for teaching LO to grade 9 learners were interviewed, their classes were observed, artifacts were gathered and the Curriculum Assessment Policy Standards document (CAPS) was analysed. Two teachers were teaching LO at the same school; the other two teachers taught LO at two other high schools.

Before I started with the research process, a letter was sent to the Western Cape Education Department (WCED) to ask for permission to conduct research at the identified schools. After receiving permission to conduct research, I applied to Stellenbosch University for ethical clearance, which was granted for the mentioned research study. Letters were then sent to school principals to inform them of my

intention to conduct my study at their schools. Initially, I started with five high schools; two schools were excluded from the study due to delays Another school was excluded due to an inability to make contact with the teachers and hours spent waiting at the school to speak to the principal, even though appointments were made.
I was never able to communicate with the principal personally about this research study because he was always busy. The secretary insisted that, if the principal gave his permission, the teachers automatically gave their consent. I explained to the secretary that I needed teachers' informed consent before any research could take place. This incident proved to be the exception in my research process.
I was generally well received by the schools and the teachers who agreed to participate in the research gave me their full co-operation in the process.

6.2.2 Challenges Expressed by Teachers

Teachers are experiencing problems teaching environmental concepts in LO in grade 9. They are facing challenges within the classroom due to a lack of specialised training for the subject. There are few, if any, opportunities for continuous in-service professional development. The burden is thus placed on non-specialist teachers to teach LO, with little funding allocated to LO a lack of other material resources, and a lack of a management imperative. Time constraints was another factor expressed by teachers in this study. The main reason was that it was difficult to complete the required curriculum content with the little time allocated to LO in the school timetable.

An important finding is the fact that teachers are not trained to teach environmental concepts in LO. Health, social and environmental responsibility need foundational knowledge in Biological and Environmental Sciences, coupled with Sociology, to present this topic (Gous and Roberts, 2015: 63), successfully. Another important finding is that no in-service training exists for LO teachers with regard to health, social and environmental responsibility.

This difficult situation is exacerbated by the nature of the CAPS curriculum document as indicated by Swarts et al. (2015). They indicate that integrating EE with LO will be difficult, for the following four reasons:

- CAPS introduces a content reference approach to social and environmental concerns as the foundation for learning;
- There are given timeframes in which to cover the course material on social and environmental concerns;
- Adherence to departmental regulations regarding summative assessment is required (SA. DBE, 2011:33), which favours a teaching-to-the-test-or-examination paradigm; and
- The role of the LO teacher in developing learning activities is not clearly spelled out.

These sentiments were also evident in the discussions with teachers and confirmed the difficulties that teachers experience in their practices in teaching LO.

6.3 POSSIBILITIES

There are parallels between LO and EE as presented by Swarts (2015: 101) and outlined in the CAPS policy document. It provides guidelines for teachers on how to implement environmental concepts in grade 9 LO. and can therefore contribute successfully to the promotion of "socially and environmentally responsible behaviour" among learners. In terms of these it should be possible to teach these parallels through the three approaches of EE, that is, education about the environment, education in or through the environment and education for the environment as stated by Fien (1993). Teachers however made no comments about what they found as possible strategies for teaching EE in terms of the LO curriculum. Given the data regarding teacher's understanding of the construct environment and their teaching approaches observed this is not surprising. Teachers did however include suggestions as to how LO might be better received and better taught in terms of the school management and professional development processes they require.

6.3.1 Holistic and empowering (focus on knowledge, values and skills)

It is important to teach environmental concepts in a holistic and empowering way. A focus on the local environment to increase relevance and stimulate interest among learners. This also provides a contextualised view of environmental issues and problems. Dialogue acknowledges learners' opinions for the purpose of developing critical thinking. Dialogue as a learner-centred activity further provides learners with

the opportunity to contribute orally to class discussions. This can be accomplished by way of group work, which further facilitates collaborative learning and co-construction of knowledge.

Learner-centred activities with an emphasis on participation also provide for active learning in teaching and learning contexts. This involves education in or through the environment, where learners can gain a first-hand experience in the environment. This can be accomplished by way of excursions and field trips to different contexts in the local environment. This can engender in learners a viewpoint of the world as a set of related systems, thereby recognising that problem-solving contexts do not exist in isolation. This involves education about the environment as the most general form of EE. From a LO perspective. Theron and Dalzell (2006) state the education system, by means of an effective LO curriculum, can be instrumental in addressing the needs and risks associated with adolescent development. In this study it became clear that the knowledge area of curriculum implementation in (CAPS), represented as environmental concepts in the subject LO needs specialised approaches which teachers are lacking. In order to provide what is suggested above focused in-service programmes would need to be implemented for all LO teachers.

6.4 RECOMMENDATIONS

An important finding is that teachers are not trained to teach environmental concepts in LO. Gous and Roberts (2015) suggest that health, social and environmental responsibility need foundational knowledge in Biological and Environmental Sciences, coupled with Sociology, to present this topic successfully. A lack of such knowledge is clearly absent in the teacher sample and hence the success of teaching LO is compromised. Another important finding is that no in-service training exists for LO teachers with regard to health, social and environmental responsibility. Ongoing and subject relevant in-service training is an important need expressed by teachers. This should be included in the support processes for teachers in order to improve subject matter knowledge and teaching confidence.

School management need to be informed of the importance of the subject for development of adolescent learners. They also need to see LO as a key subject and promote its development and status. At the moment, few resources are allocated to the subject both in human and material terms. This needs to change so that both students

and teachers can show more interest and also more “respect” for the subject.

Better resources that can assist teachers in implementing environmental concepts in LO. Funds for LO workshops and training for teachers would be well received and useful in terms of improving practice. This can contribute to what Gous and Roberts, (2015) indicate as the adoption of a unique teaching style for teaching LO, specifically environmental concepts.

6.4.1 Recommendations for Further Research

It would be important to broaden the research to include more schools in a cluster for to research the process. It would be useful to involve the school management and possibly also Department of Education representatives in such a research process to provide a more inclusive set of respondents that could yield richer data. This could lead to improvement of the subject’s status that would improve interest in teaching and learning in this area of the curriculum. The challenge of seeing LO as a valuable subject is actually part of a bigger setting and should, therefore, be addressed at a national level to provide clarity on the curriculum role of the subject.

6.5 CONCLUSION

The aim of this study was to investigate how teachers cope with the curriculum requirements of the LO CAPS policy document for grade 9. This was based around teachers' understanding of the requirements for implementing environmental concepts in LO, the possibilities teachers envisaged for implementation and the challenges that prevent them from successfully implementing environmental concepts. How teachers overcome these challenges was also an important consideration in this study. These were answered in terms of the research questions and led to the findings of this study.

It is evident that teachers are challenged to implement environmental concepts successfully in LO in grade 9 due to various challenges. If education is to make a contribution and respond to the difficult environmental situations we find ourselves in on Planet Earth, more needs to be done to assist teachers in their practices. This study therefore contributes to the field of curriculum implementation, EE and the subject LO, both locally as well as internationally, by highlighting how teachers experience the teaching of environment-related topics in LO. It shows how teachers cope with EE pedagogies within the learning area and what they consider areas that would assist and improve these processes. This study also provided a gateway to further research in the field of EE and LO, since the environment is a concept only recently added to the South African school curriculum. It highlights the importance of LO teachers, who play a crucial role in ensuring that learners are equipped with the knowledge and skills to play a positive role in their environment in order to ensure their own health as well as the health of those around them. The recommendations based on teachers' experiences need to be taken into account if we are serious about environment and issues. It is hoped that this study made a contribution to remedying some of the shortcomings in this area of the curriculum.

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LIST OF APPENDICES

APPENDIX 1: Accessing Sites Letter/Western Cape Education Department

Audrey.wyngaard@westerncape.gov.za
tel: +27 021 467 9272
Fax: 0865902282
Private Bag x9114, Cape Town, 8000
wced.wcape.gov.za

REFERENCE: 20160526- 812
ENQUIRIES: Dr A T Wyngaard

Ms Leonora Dirks
12 Kwikkie Street
Robinvale
Atlantis
7349

Dear Ms Leonora Dirks

RESEARCH PROPOSAL: AN INVESTIGATION INTO TEACHERS' PERSPECTIVES ON THE IMPLEMENTATION OF ENVIRONMENTAL CONCEPTS IN LIFE ORIENTATION IN GRADE 9: A WESTERN CAPE CASE STUDY

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **01 August 2016 till 28 February 2017**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.

10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

Directorate: Research

APPENDIX 2: Accessing Sites Letter/Western Cape High Schools

From: En Dee [deemchln_528@outlook.com]
Sent: 25 February 2016 11:30 AM
To: _____
Subject: Re: MEd Research

Dear Principal

I visited your school on Tuesday 23-02-2016. I would like to involve _____ High School in my postgraduate studies at the University of Stellenbosch. I am currently registered as a Masters student in Curriculum Studies at the Faculty of Education.

My research involves the following aspects:
Topic: An investigation into teachers' perspectives on the implementation of Environmental Education in Life Orientation.

With this being said, I need to find out what prevent teachers to implement Environmental Education effectively and also provide recommendation on how to improve implementation of Environmental Education in Life Orientation.

I plan to work with Grade 9 Life Orientation teachers to document their understandings, views. Observing lessons will also be part of my research.

Is it possible for you to give me permission to involve your school in my research?

Regards

Leonora

From: _____
Sent: 25 February 2016
To: En Dee
Cc: _____
Subject: RE: MEd Research

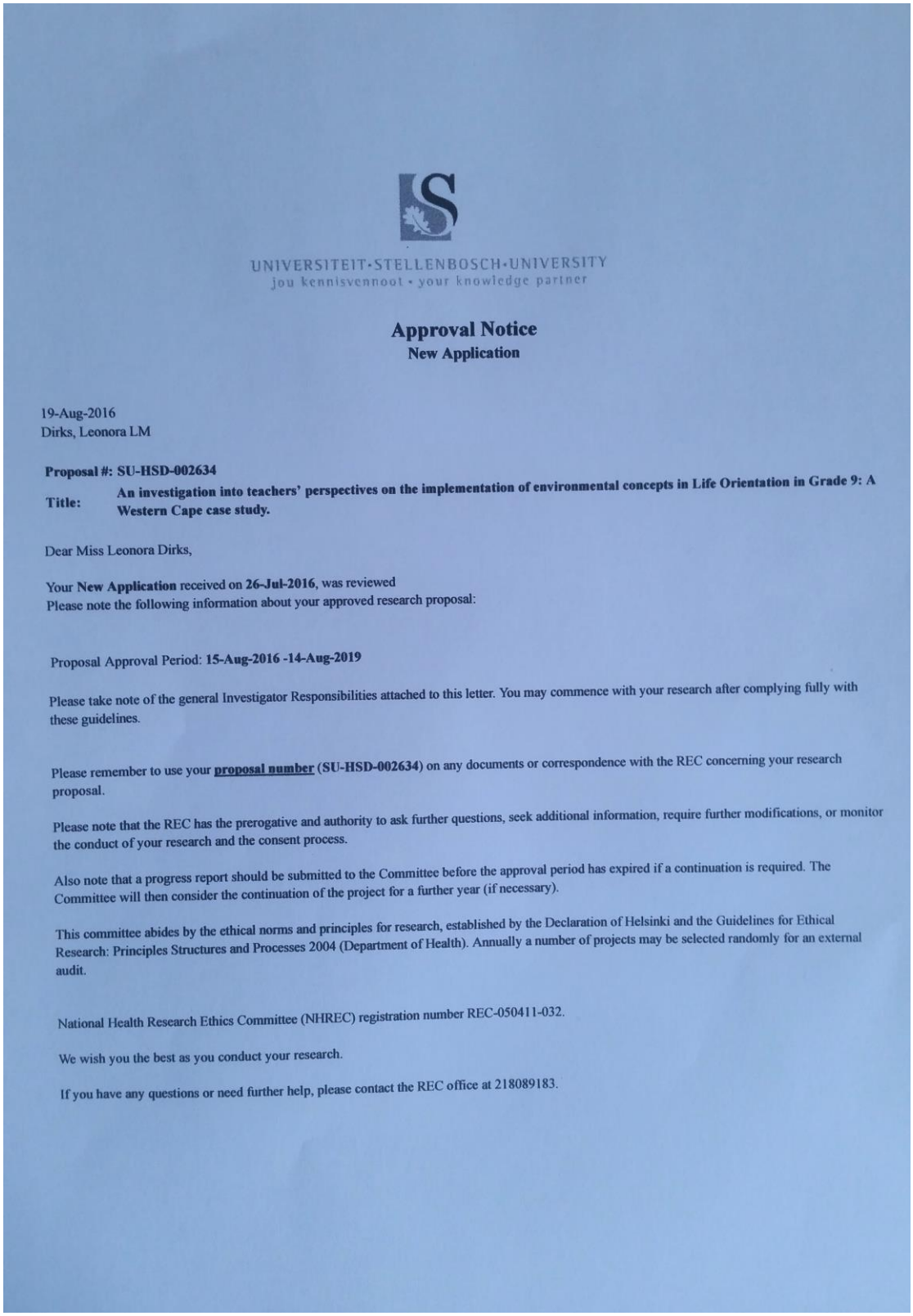
Morning

I have no problem but the decision will be with the head of the LO department. Me _____ will answer you as soon as possible.

Thank you very much.
Regards.

_____

APPENDIX 3: Ethical Clearance letter / Stellenbosch University



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Approval Notice
New Application

19-Aug-2016
Dirks, Leonora LM

Proposal #: SU-HSD-002634

Title: **An investigation into teachers' perspectives on the implementation of environmental concepts in Life Orientation in Grade 9: A Western Cape case study.**

Dear Miss Leonora Dirks,

Your **New Application** received on **26-Jul-2016**, was reviewed
Please note the following information about your approved research proposal:

Proposal Approval Period: **15-Aug-2016 -14-Aug-2019**

Please take note of the general Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

Please remember to use your **proposal number** (**SU-HSD-002634**) on any documents or correspondence with the REC concerning your research proposal.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Also note that a progress report should be submitted to the Committee before the approval period has expired if a continuation is required. The Committee will then consider the continuation of the project for a further year (if necessary).

This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki and the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health). Annually a number of projects may be selected randomly for an external audit.

National Health Research Ethics Committee (NHREC) registration number REC-050411-032.

We wish you the best as you conduct your research.

If you have any questions or need further help, please contact the REC office at 218089183.

Included Documents:
DESC Report
REC: Humanities New Application

Sincerely,

Clarissa Graham
REC Coordinator
Research Ethics Committee: Human Research (Humanities)

Investigator Responsibilities

Protection of Human Research Participants

Some of the general responsibilities investigators have when conducting research involving human participants are listed below:

1. Conducting the Research. You are responsible for making sure that the research is conducted according to the REC approved research protocol. You are also responsible for the actions of all your co-investigators and research staff involved with this research. You must also ensure that the research is conducted within the standards of your field of research.

2. Participant Enrollment. You may not recruit or enroll participants prior to the REC approval date or after the expiration date of REC approval. All recruitment materials for any form of media must be approved by the REC prior to their use. If you need to recruit more participants than was noted in your REC approval letter, you must submit an amendment requesting an increase in the number of participants.

3. Informed Consent. You are responsible for obtaining and documenting effective informed consent using **only** the REC-approved consent documents, and for ensuring that no human participants are involved in research prior to obtaining their informed consent. Please give all participants copies of the signed informed consent documents. Keep the originals in your secured research files for at least five (5) years.

4. Continuing Review. The REC must review and approve all REC-approved research proposals at intervals appropriate to the degree of risk but not less than once per year. There is **no grace period.** Prior to the date on which the REC approval of the research expires, **it is your responsibility to submit the continuing review report in a timely fashion to ensure a lapse in REC approval does not occur.** If REC approval of your research lapses, you must stop new participant enrollment, and contact the REC office immediately.

5. Amendments and Changes. If you wish to amend or change any aspect of your research (such as research design, interventions or procedures, number of participants, participant population, informed consent document, instruments, surveys or recruiting material), you must submit the amendment to the REC for review using the current Amendment Form. You **may not initiate** any amendments or changes to your research without first obtaining written REC review and approval. The **only exception** is when it is necessary to eliminate apparent immediate hazards to participants and the REC should be immediately informed of this necessity.

6. Adverse or Unanticipated Events. Any serious adverse events, participant complaints, and all unanticipated problems that involve risks to participants or others, as well as any research related injuries, occurring at this institution or at other performance sites must be reported to Malene Fouch within **five (5) days** of discovery of the incident. You must also report any instances of serious or continuing problems, or non-compliance with the RECs requirements for protecting human research participants. The only exception to this policy is that the death of a research participant must be reported in accordance with the Stellenbosch Universtiy Research Ethics Committee Standard Operating Procedures. All reportable events should be submitted to the REC using the Serious Adverse Event Report Form.

7. Research Record Keeping. You must keep the following research related records, at a minimum, in a secure location for a minimum of five years: the REC approved research proposal and all amendments; all informed consent documents; recruiting materials; continuing review reports; adverse or unanticipated events; and all correspondence from the REC

8. Provision of Counselling or emergency support. When a dedicated counsellor or psychologist provides support to a participant without prior REC review and approval, to the extent permitted by law, such activities will not be recognised as research nor the data used in support of research. Such cases should be indicated in the progress report or final report.

9. Final reports. When you have completed (no further participant enrollment, interactions, interventions or data analysis) or stopped work on your research, you must submit a Final Report to the REC.

10. On-Site Evaluations, Inspections, or Audits. If you are notified that your research will be reviewed or audited by the sponsor or any other external agency or any internal group, you must inform the REC immediately of the impending audit/evaluation.

APPENDIX 4: Consent to Participate in Research

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STELLENBOSCH UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH

An investigation into teachers' perspectives on the implementation of environmental concepts in Life Orientation in Grade 9: A Western Cape case study.

You are asked to participate in a research study conducted by **LEONORA MICHELLE DIRKS** doing her Master of Education (MEd), from the Curriculum Studies D*epartment* at Stellenbosch University. *The results of the study will be contributed to her research paper.* You were selected as a possible participant in this study because your views and opinions with regards to teaching environmental concepts to Grade 9 Life Orientation learners will provide the best information to address the purpose of her research. This study is necessary because it can provide information about and highlight challenges currently experienced by Life Orientation teachers when implementing environmental concepts as a learning requirement in Grade 9 in schools.

1. PURPOSE OF THE STUDY

To analyse teachers' responses to the requirements to teach environmental concepts as part of the Life Orientation curriculum.
To understand teachers' experiences of, teaching practices/ and approaches to implementing the curriculum imperatives related to the environment in Life Orientation.
To understand teachers' perspectives on the environment and issues as presented in the Life Orientation curriculum.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

To take part in interviews:

Semi-structured interviews consisting of questions related to the understanding and implementation of environmental concepts required by Life Orientation curriculum documents for Grade 9 in secondary schools should be answered. Semi-structured questions will be designed in such a way to allow open-ended responses providing in depth information. You will be required to take part in one interview plus a follow-up interview. Interviews will be 30 minutes long and will take place after school within the classroom. One interview will take place before classroom observation and the follow-up interview will take place after classroom observation.

Present artifacts:

Show evidence of lesson plans, resources (textbooks and other materials) as part of evidence of teachers' engagement with curriculum requirements for Life Orientation. Teacher's ideas related to the environment and environmental issues will also be looked at.

Classroom observation:

Allow researcher to be part of actual presentation of lessons to observe teacher's methods, content and resources. Observations of two lessons will take place within the classroom. The duration of the classroom observation will depend on the length of the period in which it takes place with learners present.

3. POTENTIAL RISKS AND DISCOMFORTS

Any risk or unexpected emergency will be reported to the supervisor immediately, for further advice.

4. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The study can provide information about and highlight challenges currently experienced by Life Orientation teachers when implementing environmental concepts

as a learning requirement in Grade 9 in schools. The study can add voices to individual teachers to the existing body of Environmental Education knowledge and implementation.

Since my work is located in the Environmental Education field as a sub-field of education, it will contribute to Environmental Education implementation as well as the learning area, Life Orientation. My thesis can provide answers to questions for curriculum developers who constantly need reflection to see how curriculum policies are doing in practice in order to improve future curriculum documents.

5. PAYMENT FOR PARTICIPATION

Subjects will not receive any payment.

6. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of saving data on password-protected computers, only accessible to the researcher.
No school or individual names will appear in the data report. No names will be used to link people to data.

7. PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

8. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact the Principal Investigator, **Leonora Michelle Dirks,** residing at Botmashoogte Residence, Idas Valley, Stellenbosch, at 076 305 9832 or (021) 5723657 or the Supervisor for this study, **Professor Chris Reddy**, Curriculum Studies, Department of Education, Stellenbosch University, at 021 808 2259.

9. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE

The information above was described to _____ by **Leonora Michelle Dirks** in ***Afrikaans/English*** and translated in a satisfactory manner to me. I was given the opportunity to ask questions and these questions were answered to *my* satisfaction.

I hereby consent voluntarily to participate in this study. I have been given a copy of this form.

_____

Name of Subject/Participant

_____

Name of Legal Representative (if applicable)

_____ _____

Signature of Subject/Participant or Legal Representative **Date**

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to _____ as a *participant* and/or his/her representative _____ (*name of the representative). He*/she was encouraged and given ample time to ask me any questions. This conversation was conducted in *Afrikaans*/*English* and (*no translator was used/this conversation was translated into* _____ by _____).

_____ _____

Signature of Investigator **Date**

APPENDIX 5: Information Letter to Parents

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Information Letter for Parents or Guardians
Permission for Research conducted with Grade 9 LIFE ORIENTATION Learners in Classroom

Date: 21 July 2016

Dear **Parent(s) or Guardian(s)**:

I am writing this letter to inform you that your child will be present in a research project on: **Teachers' perspectives on the implementation of environmental concepts in Life Orientation in Grade 9: A Western Cape case study.**

This project will be conducted at _____ **High School** in the month of August 2016 and January 2017. The research is conducted by Ms. Dirks, a registered Masters student at the University of Stellenbosch. She is interested in how Grade 9 Life Orientation teachers implement environmental concepts as a learning requirement of the Curriculum Assessment Policy Statement (CAPS). To gain insight into this, she needs to conduct classroom observations as part of her data collection methods. Learners will therefore be present while she conducts the classroom observation procedure. They will not be directly involved and will not have to answer any questions or respond to any enquiries from the researcher.

Only learners in **Grade 9** will be present in the research project. There are no known or anticipated risks to be present in this study. I would like to assure you that this

study has been reviewed and approved by the Research Ethics Committee at Stellenbosch University. In addition, it has the support of the principal in this regard. However, the final decision about the learners being present for this study is yours. Should you have any concerns or comments resulting from your child's presence in this study, please contact **(Professor Frick, Stellenbosch University, BLF @sun.ac.za & 021 808 3807).**

If you have any questions about the study, or if you would like additional information to assist you in reaching a decision, please feel free to contact Ms. **L.M. Dirks** at 19815921@sun.ac.za & 076 305 9832 or the faculty supervisor, Professor Reddy at**,** cprs@sun.ac.za & 021 808 2259.

Thank you in advance for your interest and support of this project.

Sincerely,

(Signature)	**(Signature)**
(Typed Name of Student Researcher)	**(Typed Name of Faculty Advisor)**
L.M. DIRKS	C. REDDY
(Title)	**(Title)**
Miss	Professor
(Department)	**(Department)**
Curriculum Studies	Curriculum Studies

Stellenbosch University

APPENDIX 6: Interview Protocol

Interview protocol:

Project: An investigation into teachers' perspectives on the implementation of environmental concepts in Life Orientation in Grade 9: A Western Cape case study.

Time of interview: 13:05 - 13:30
Date: 29 July 2016
Place: (school name)
Interviewer: L.M. Dirks
Interviewee: (teacher's name)
Position of Interviewee: Grade 9 Life Orientation teacher
Duration of interview: 25 minutes

Use icebreakers to open the conversation.

1. **How long have you been a Grade 9 Life Orientation teacher?**
2. **Give a brief description of your educational background.**
3. **Why did you change to teaching?**
4. **What's your opinion regarding the subject life Orientation?**
5. **What's your opinion about CAPS?**

(Elaborate on important ideas) in interview as well.

- **Do you want to ask any questions?**

(Thank the individuals for their cooperation and participation in this interview. Assure them of the confidentiality of the responses and the potential for future interviews).

APPENDIX 7: Interview Schedule

Interview questions for Life Orientation teachers

General Information

1. Age	
2. Gender	
3. Teaching / working experience (years)	
4. District	
5. Highest academic qualification	

Interview Questions

1. How would you define the concept environment?

   _____

2. What aspects of the environment is covered in the Life Orientation curriculum for grade 9?

   _____

   _____

3. How important do you think is the teaching of environmental education in Life Orientation?

   _____

   _____

   _____

4. How do you understand the integration of environmental concepts in the Life Orientation curriculum?

   _____

   _____

   _____

5. Do you implement environmental education in your practice as a Life Orientation teacher?

   a) _____

   b) What do you do in terms of teaching methods and content?

   _____

   _____

   c) How do you do it? What resources are available?

   _____

   _____

   _____

6. What possibilities do you envisage for implementing environmental concepts in Life Orientation?

   _____

   _____

   _____

7. Are there challenges that limit you to successfully implement environmental concepts in Life Orientation and how do you overcome them?

   _____

   _____

   _____

8. Do you receive professional training with regards to the CAPS curriculum that enable you to implement environmental concepts in Life Orientation?

   _____

   _____

9. To what extent has the implementation of environmental concepts in the Life Orientation CAPS curriculum affect your teaching, if at all?

   _____

   _____

10. Were you provided with effective environmental education teaching methods during your teachers' education?

_____

_____

11. What learning activities are most suitable for meeting the needs of learners when teaching environmental concepts in Life Orientation?

_____

_____

12. How can these activities best be organised?

_____

_____

APPENDIX 8: Observation Protocol

Observational protocol

Observational fieldnotes: Observing lessons of Grade 9 LO teachers

Setting: Classroom, _____ High School

Observer: L.M. Dirks

Role of observer: Observe if teacher does what she said she does

Time: 09:11 – 09:55

Length of observation: 44 Minutes

Date: 17 August 2016

OBSERVATIONAL CHECKLIST

What is my role as an observer? To observe Life Orientation lesson to see how teacher implement environmental concepts.

What will I observe first? How teacher interact with learners when teaching environmental concepts

Will your observations change from broad to narrow? Yes

Descriptive field notes: Record a description of the events, activities, and people (How is the teacher engaging with learners)

Reflective field notes: My personal thoughts that relate to insights, hunches or broad ideas to themes that emerge during the observation (Sense I made of the site, people, and the situation).

TIME	DESCRIPTION OF LESSON	REFLECTIVE NOTES
09:11	Roll call	**Teacher check who is absent.**
09:14	**Lesson begins:** Different types of volunteer organisations – Textbook page 134. **Question and answer teaching method:**	**Teacher ask questions and learners answer. If they struggle, she assisted them.**

	Teacher uses question and answer method to communicate to learners. **Real-life examples:** Teacher uses real-life example of community services of a boy named Nathan who plays soccer in Cloetesville.	**The use of the real-life example was used to make learners understand the importance of community service in their immediate area.**
09:17	**Interruption:** Knock on door. Two learners from another class joined this class. **Real-life example of community service:** Neighbourhoow watch –Teacher explains t learners how a neighbourhood watch works.	**Learners listen attentively to teacher.**
09:18	Teacher ask learners to give examples of community projects involving the community and environment. **Examples given by learners:** *Soup Kitchen: Teacher explains to learners the purpose of a soup kitchen *Feeding scheme: This was mentioned by teacher *Assit All-Pay pensioners: Teacher explains to learners that pensioners do get support from paid volunteers. *Donating blood: Teacher explains that donating blood is a personal decision *Clinics: Teacher explains that volunteers here are paid for their volunteerism.	**While asking the learners to give their examples the teacher also gave her examples in between.** **Learners seem enthusiastic.**
09:22	Teacher asks learners if there is anything in nature we can do:	**Learners listen attentively to their fellow**

	*Learner: Pick up papers, Bigga nacks, lollipop papers *Learner: To plant plants, vegetables, trees and flowers. Teacher ask learners what we can do to **nature so that it can benefit from us:** *Learner mentions together with teacher the recycle proces.	**learners**
09:25	Teachers shows activity paper to learners and ask if she used it correctly: Learners answered NO. Teacher ask learners: What is the condition of the environment? Learner: It's in a bad condition. Teacher: Why is it in a bad condition? Learner: Lots of paper / garbage, cigarette smoking results in air pollution. Teacher: What does men do that contribute to air pollution (check right here in Stellenbosch when they come down this road next to the school? Learners answer all together – CARS! Teacher: Emissions like travelling, always try for a life club.	**The way the printing was done on the paper looks like the teacher had wasted paper because there was a lot of open space on the paper. I think she has done it that way so that learners can see how paper can be wasted.** **Teacher uses a real-life example.**

09:28	Teacher: Anything else that's bad for the environment? Teacher ask learners what the concept Sustainable Development is. Learners: No one answers Teacher explains: The concept environment, community and school meaning that we better out situation at a rate that there's still left.	**Teacher's explanation seems understandable for the level of the learners.**
09:31	Teacher reads to the learners the concept Sustainable Development. Teacher ask learners what natural resources is: Learner answer: TREES Teacher explains inhaling and exhaling, when its hot I (teacher) like to sit under the tree	**Not all learners are paying attention now.**
09:33	Learner ask teacher: How is paper made from tree to paper? Teacher ask learners the importance of water for humans: Learners: We drink and wsh in water, We swim in the river, sea and dams. We make food with water. We water the plants and trees No water, no alcohol	**Teacher did not answer learner.** **Asked me to explain to learners after she is finished with her lesson.** **I found the question interesting.**
09:35	Teacher ask:	

	How do we waste water? Learners asnwer: Running water Swimming pools – waste of water Shower not taking a bath - use each other water Teacher mentions: Food is our natural resource, for example do not catch too many fish.	
09:39	Teacher reads from activity sheet: Sustainable Development is the the responsible management of all natural resources, including projects that fights poverty and work to eradicate inequalities between the rich and poor. Example: She mentions a real-life example from Bloemfontein. She mentions the gap between rich and poor and why there is a gap. Learner mentions: Rich is getting richer and poor is getting poorer. Teacher: How can we close that gap Learner: Everyone must get the same opportunities.	
09:44	One learner tells a story: A boy asked her a Rand. Those that have must help those that don't have. She gave him the Rand. Another learner: Rich people should be taxed more. Teacher explaines: The more you, the more	

	you get taxed. Learner: Rich people must help poor people with education. They should help putting children through primary and high school.	
09:47	The objective of Sustainable Development: Teacher explains: The objective of Sustainable Development is South Africa is work for all and access to affordable basic services of good quality. Teacher makes an example: If I help a learner that same learner can help someone else.	**Teacher reads the objective of Sustainable Development from the activity sheet**
09:49	Teacher mentions: Clinics are there for those who doesn't have money.	**Learners talk while teacher is talking**
09:50	Teacher mentions: To keep the environment in a better condition. Not to use everything until its finished. The gap between rich and poor. Teacher talks about a quote: "Everything is good in moderation". She explains to learners that there is nothing wrong to eat KFC now and then, also alcohol and red wine. Too much of it is unhealthy. We should use water in moderation "We must have a little bit of everything".	**Teacher makes a link between the environment and health.**
09:53	Next lesson: Teacher the lesson will be outside. Give learners an activity. Activity: Go an look at the condition of your environment at your home and school. Bell rings, period over.	
09:54	I thanked the respondent for allowing me to observe her lesson!!	

APPENDIX 9: Observation schedule

Implementation of environmental concepts by Life Orientation teachers in grade 9:

A Western Cape case study

a. Grade ……..

b. Topic ……

c. Number of learners ……..

d. Region ……

Observation

1. For each of the following statements, please indicate the physical conditions of the classroom whether good or bad. The questions were formulated to the five point likert scaling, 5 stands for very bad and 1 for very good:

	1	2	3	4	5
1. Context description: Is the classroom space arranged to accommodate a specific teaching style to teach environmental concepts in Life Orientation?					
2. Are there any posters related to Life Orientation on the walls?					
3. Are there any posters related to environment on the walls?					

Others (Specify) ……

2. Indicate in the box below the teaching resources used during the observation:

Teaching resources	Tick
CAPS document	
Textbooks	
Posters	
Writing board	

Projector	
Computer	

Others (Specify) ……..

3. Indicate in the box below the types of methods used for teaching environmental concepts:

Teaching strategies	Tick
Lecture - Topic approach	
Cooperative learning - Group work	
Discussion - Dialogue	
Active learning - Issues & themes approach	
Case studies of environmental topics	

Others (Specify) ……..

How is EE incorporated in the lesson?	Tick the appropriate box
Lecture - Topic approach	
Cooperative learning - group work	
Discussion – Dialogue (**For** and **about** the environment)	
Active learning - Issues & themes approach (**In** the environment)	
Case studies of environmental topics (**For** the environment)	

4. Is environmental education integrated in the lesson? ……

5. How did the teacher integrate environmental education in the lesson?
   ……..
   ……..

6. Was environmental concepts central to the topic taught?

a) Did the teacher make links between Life Orientation and the environment?

……..…….

……

b) If he / she made a link, how was it done?

……

……

7. Under what circumstances did the teacher teach environmental concepts? Was the learners well-behaved / disciplined / undisciplined?

……..

……..

8. What activity was used to teach learners about environment concepts?

……..

……..

……..

9. How was learners evaluated in terms of understanding environmental concepts in Life Orientation?

……..

……..

10. Did the teacher's lesson cover all aspects of the lesson plan? If so, what was left out and what was covered?

…….

…….

…..……

APPENDIX 10: Classroom Observation Rubric

Classroom observation rubric

Teacher 1

Date

	WEAK	ADEQUATE	STRONG	N/A	COMMENTS
Classroom dynamics are positive with regards to EE and LO	•				
Learning objectives are clear	•				
Teacher relates material to prior knowledge		•			
Teacher encourages interaction		•			
Teacher is prepared		•			
Teacher explains expectations clearly	•				
Teacher is organised	•				
Use of learning activities for EE is appropriate		•			
Teacher responds to learners' questions effectively		•			
Explanations and definitions related to EE and LO are clear	•				
Main ideas are summarised	•				

APPENDIX 11: Artifact Rubric

ARTIFACTS RUBRIC

(Lesson plans, posters, resources (Textbooks & Materials)

	YES	NO
Is the word environment mentioned?	•	

In what context is environment used? Teacher wrote activity on black board for learners. Activity included concepts such as, social health, environmental health and sustainable development.			
	IN	**ABOUT**	**FOR**
What are favoured teaching methods approaches?		Group work	discussion

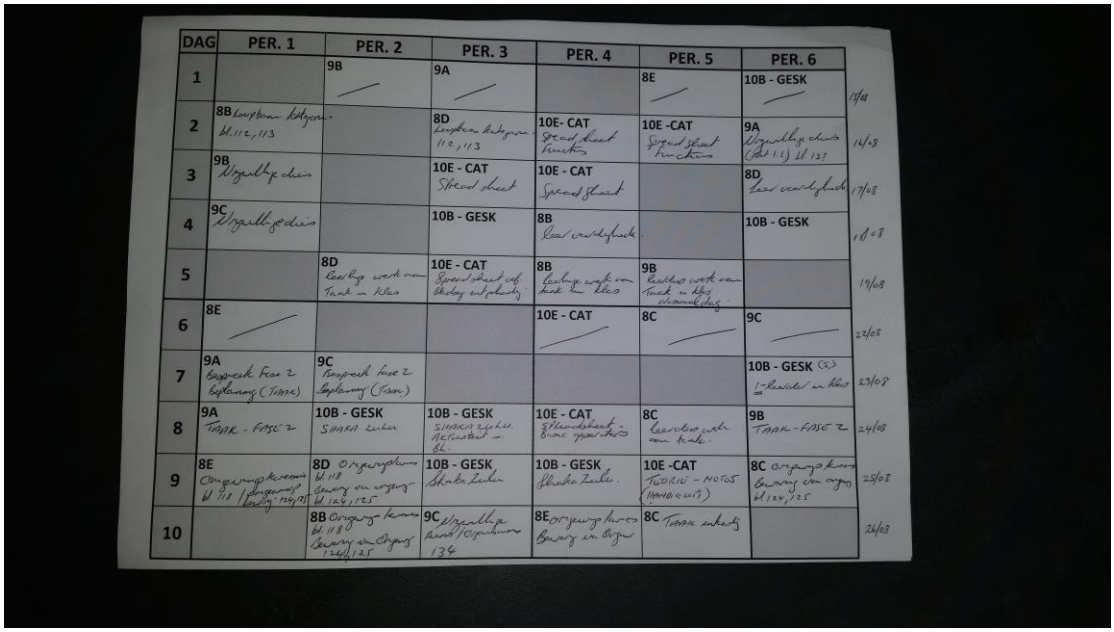
APPENDIX 12: Lesson Plan - Teacher 2

APPENDIX 13: Activity -Teacher 2

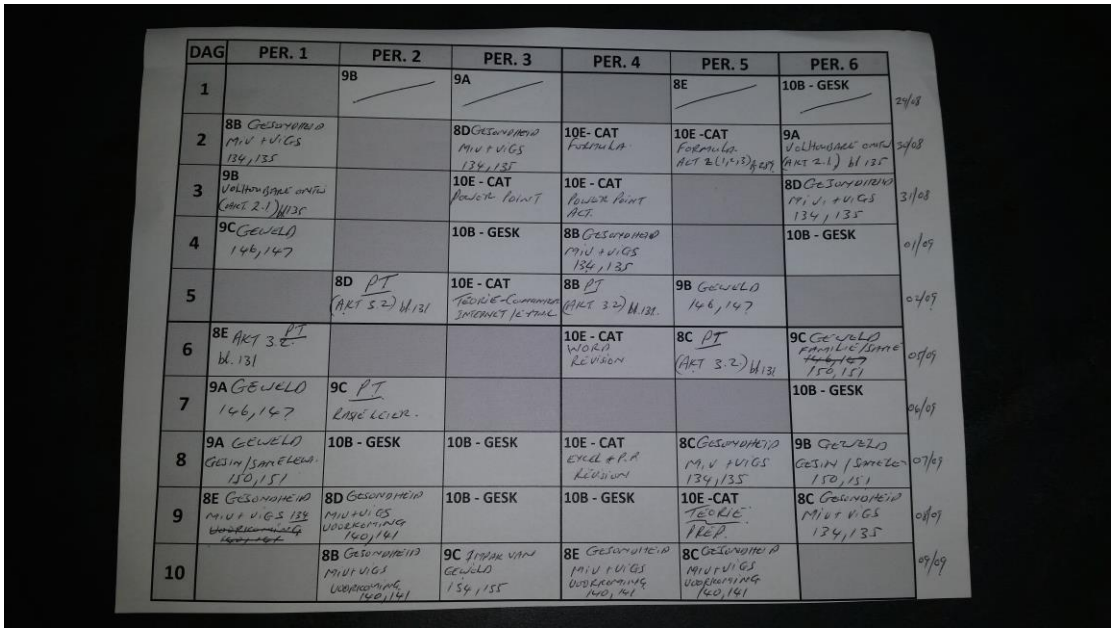
Aktiwiteit:

- Werk in groepe van 2 – 4.
- Google liefdadigheidsorganisasies.
- Besluit in jul groep op 'n spesifieke organisasie.
- Wat doen hierdie organisasie?
- Soek na 'n opkomende geleentheid wat deur hierdie spesifieke organisasie gereël word en sê hoe jy daarby betrokke kan raak.

APPENDIX 14: Lesson Plan - Teacher 3



DAG	PER. 1	PER. 2	PER. 3	PER. 4	PER. 5	PER. 6	
1		9B	9A		8E	10B - GESK	11/8
2	8B Luiperkat bekyk bl. 112, 113		8D Luiperkat bekyk 112, 113	10E- CAT Spreadsheet functions	10E -CAT Spreadsheet Functions	9A Vrywillige diens (Art 1.1) bl 131	14/8
3	9B Vrywillige diens		10E - CAT Spreadsheet	10E - CAT Spreadsheet		8D Leer vaardighede	17/08
4	9C Vrywillige diens		10B - GESK	8B Leer vaardighede		10B - GESK	18/08
5		8D Leerlyn werk aan Taak in Klas	10E - CAT Spreadsheet oefeninge uitgedeel	8B Leerlyn werk aan taak in klas	9B Rekkies werk aan Taak in klas Vaardighede		19/08
6	8E			10E - CAT	8C	9C	22/08
7	9A Taakwerk Fase 2 Beplanning (Taak)	9C Taakwerk Fase 2 Beplanning (Taak)				10B - GESK (2) 1-Rekenaar in klas	23/08
8	9A TAAK - FASE 2	10B - GESK SHARA Zeiler	10B - GESK SHARA Zeiler Aktiviteit - Bl.	10E - CAT Spreadsheet - Draw your shirt	8C Leerlyn werk aan taak.	9B TAAK - FASE 2	24/08
9	8E Oorgangskreums bl 118 / Oorgangs Oefeninge bl 124/125	8D Oorgangskreums bl 118 Gesels en oorgang bl 124, 125	10B - GESK Shaka Zeiler	10B - GESK Shaka Zeiler	10E -CAT TEORIE - NOTAS (HANDLEIDING)	8C Oorgangskreums Gesels en oorgang bl 124, 125	25/08
10		8B Oorgangskreums bl 118 Gesels en Oorgang 124/125	9C Vrywillige diens / Opsommings 134	8E Oorgangskreums Gesels en Oorgang	8C Taak inhandig		26/08



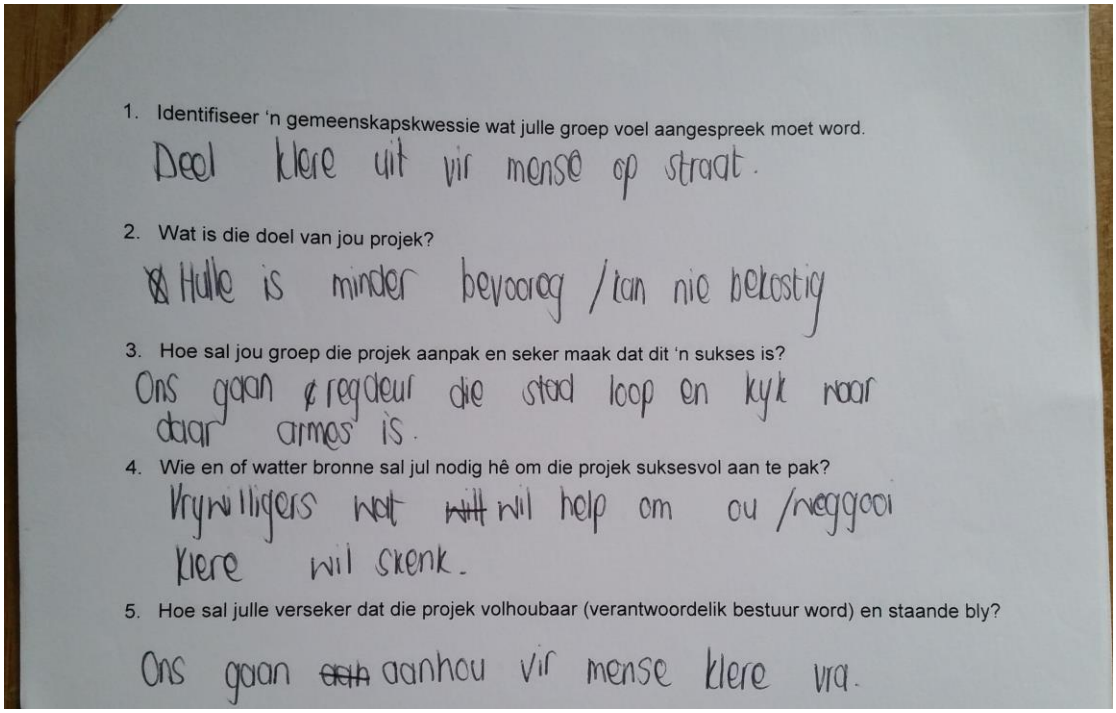
DAG	PER. 1	PER. 2	PER. 3	PER. 4	PER. 5	PER. 6	
1		9B	9A		8E	10B - GESK	24/08
2	8B GESONDHEID MIV + VIGS 134, 135		8D GESONDHEID MIV + VIGS 134, 135	10E- CAT FORMULA	10E -CAT FORMULA ACT 2 (1.1-3) bl 129	9A VOLHOUBARE ORTE (ART 2.1) bl 135	24/08
3	9B VOLHOUBARE ORTE (ART 2.1) bl 135		10E - CAT POWER POINT	10E - CAT POWER POINT ACT.		8D GESONDHEID MV, V + VIGS 134, 135	31/08
4	9C GEWELD 146, 147		10B - GESK	8B GESONDHEID MIV + VIGS 134, 135		10B - GESK	01/09
5		8D PT (ART 3.2) bl 131	10E - CAT TEORIE - Computer INTERNET / E-MAIL	8B PT (ART 3.2) bl 131.	9B GEWELD 146, 147		04/09
6	8E ART 3.2 PT bl. 131			10E - CAT WORD REVISION	8C PT (ART 3.2) bl 131	9C GEWELD FAMILIE/SAME ~~146/147~~ 150, 151	07/09
7	9A GEWELD 146, 147	9C PT LASE LEIER.				10B - GESK	06/09
8	9A GEWELD GESIN / SAMELEWING 150, 151	10B - GESK	10B - GESK	10E - CAT EXCEL + P.P REVISION	8C GESONDHEID MIV + VIGS 134, 135	9B GEWELD GESIN / SAMELEWING 150, 151	07/09
9	8E GESONDHEID MIV + VIGS 134 ~~Voorkoming Voorkoms~~	8D GESONDHEID MIV + VIGS VOORKOMING 140, 141	10B - GESK	10B - GESK	10E -CAT TEORIE PREP.	8C GESONDHEID MIV + VIGS 134, 135	08/09
10		8B GESONDHEID MIV + VIGS VOORKOMING 140, 141	9C STRAK VAN GEWELD 154, 155	8E GESONDHEID MIV + VIGS VOORKOMING 140, 141	8C GESONDHEID MIV + VIGS VOORKOMING 140, 141		09/09

APPENDIX 15: Activity - Teacher 3

Activity sheet

1. Identify a community / environmental issue your group feels should be paid attention to?
2. Wat is the objective of your project?
3. How will your group tackle the project to make sure it's a success?
4. Who and what resources will make your project a success?
5. How will you ensure that your project is sustainable (responsible management) and remain standing?

APPENDIX 16: Learner Activity - Teacher 3



1. Identifiseer 'n gemeenskapskwessie wat julle groep voel aangespreek moet word.

Deel klere uit vir mense op straat.

2. Wat is die doel van jou projek?

Hulle is minder bevoorreg / kan nie bekostig

3. Hoe sal jou groep die projek aanpak en seker maak dat dit 'n sukses is?

Ons gaan regdeur die stad loop en kyk waar daar armes is.

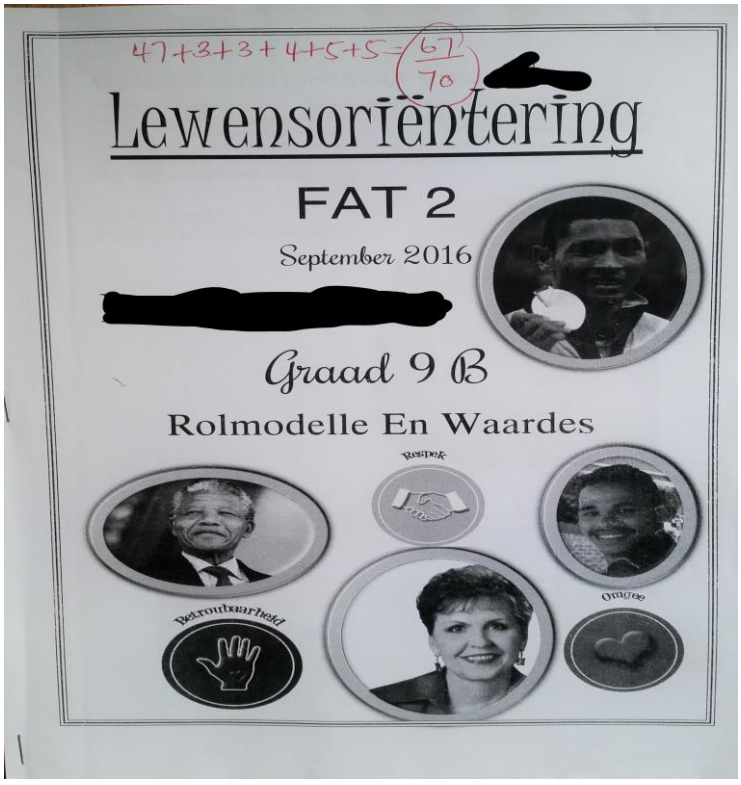
4. Wie en of watter bronne sal jul nodig hê om die projek suksesvol aan te pak?

Vrywilligers wat ~~wil~~ wil help om ou / weggooi klere wil skenk.

5. Hoe sal julle verseker dat die projek volhoubaar (verantwoordelik bestuur word) en staande bly?

Ons gaan ~~aan~~ aanhou vir mense klere vra.

APPENDIX 17: Learner Assessment Task - Teacher 4



47+3+3+4+5+5=67/70

Lewensoriëntering

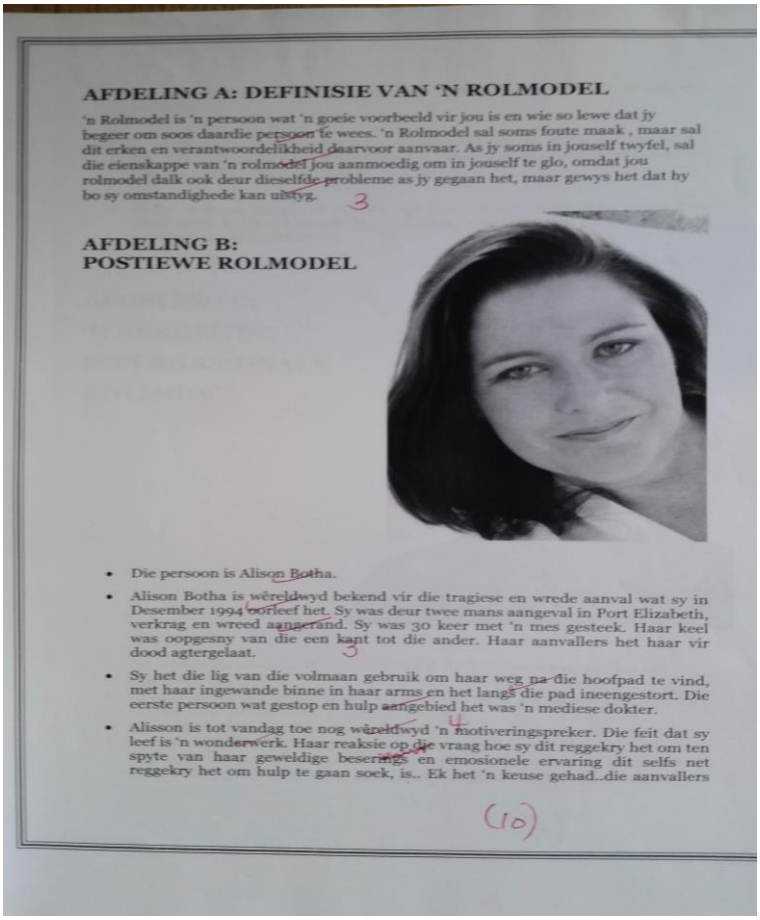
FAT 2

September 2016

[redacted]

Graad 9 B

Rolmodelle En Waardes



AFDELING A: DEFINISIE VAN 'N ROLMODEL

'n Rolmodel is 'n persoon wat 'n goeie voorbeeld vir jou is en wie so lewe dat jy begeer om soos daardie persoon te wees. 'n Rolmodel sal soms foute maak , maar sal dit erken en verantwoordelikheid daarvoor aanvaar. As jy soms in jouself twyfel, sal die eienskappe van 'n rolmodel jou aanmoedig om in jouself te glo, omdat jou rolmodel dalk ook deur dieselfde probleme as jy gegaan het, maar gewys het dat hy bo sy omstandighede kan uitstyg. 3

AFDELING B:
POSTIEWE ROLMODEL

- Die persoon is Alison Botha.
- Alison Botha is wêreldwyd bekend vir die tragiese en wrede aanval wat sy in Desember 1994 oorleef het. Sy was deur twee mans aangeval in Port Elizabeth, verkrag en wreed aangerand. Sy was 30 keer met 'n mes gesteek. Haar keel was oopgesny van die een kant tot die ander. Haar aanvallers het haar vir dood agtergelaat.
- Sy het die lig van die volmaan gebruik om haar weg na die hoofpad te vind, met haar ingewande binne in haar arms en het langs die pad ineengestort. Die eerste persoon wat gestop en hulp aangebied het was 'n mediese dokter.
- Alisson is tot vandag toe nog wêreldwyd 'n motiveringspreker. Die feit dat sy leef is 'n wonderwerk. Haar reaksie op die vraag hoe sy dit reggekry het om ten spyte van haar geweldige beserings en emosionele ervaring dit selfs net reggekry het om hulp te gaan soek, is.. Ek het 'n keuse gehad..die aanvallers

(10)

geword het, het sy die moed gehad om na hom te kyk tot op sy sterfbed. Haar pa het voor sy sterwe vir haar om vergifnis gevra.

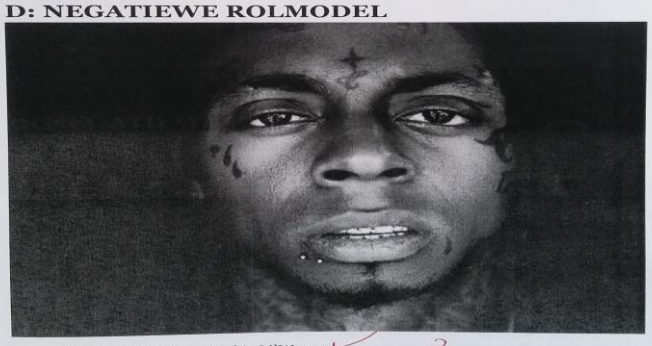
- Joyce Meyer leer vir my dat alhoewel jou omstandighede hoe sleg is, jy dit nooit as verskoning moet gebruik nie. Jy kan baie beter word as jou omstandighede.

- Joyce saai elke dag uit op TBN. Haar programme inspireer baie mense. Haar bediening help ook baie behoeftige mense in Afrika. Sy het al huise, mediese sorg, kerke en klinieke in Afrika help oprig.

- Ek weet nou dat ek nie moet toelaat dat die negatiewe dinge wat met my gebeur het, my moet onderkry nie. Ek gaan bo uitkom ,want ek weet :" Ek is tot alles in staat deur Christus wat my die krag gee."

5

D: NEGATIEWE ROLMODEL



- My negatiewe rolmodel is LilWayne
- Hy is 'n Amerikaanse rapper wat wêreldwyd beroemd is.

3

(8)

kon my vir dood agterlaat, maar hulle kon nie my keuse om te will ewe vernietig nie.

- Sy sê dat daar te veel wonderwerke plaasgevind het, dat sy nie kan toelaat dat wat met haar gebeur het, haar vernietig nie. Sy het haar aanvallers vergewe. Hulle is vandag nog in die tronk.

4

- Sy het 'n keuse gehad.. of sy lewe met haat , pyn en angs of sy vergewe en maak gebruik van die tweede kans en bring hoop vir ander. Ek wil ook graag eendag hoop vir ander bring.

2

AFDELING C: 'N BEROEMDE INTERNASIONALE ROLMODEL

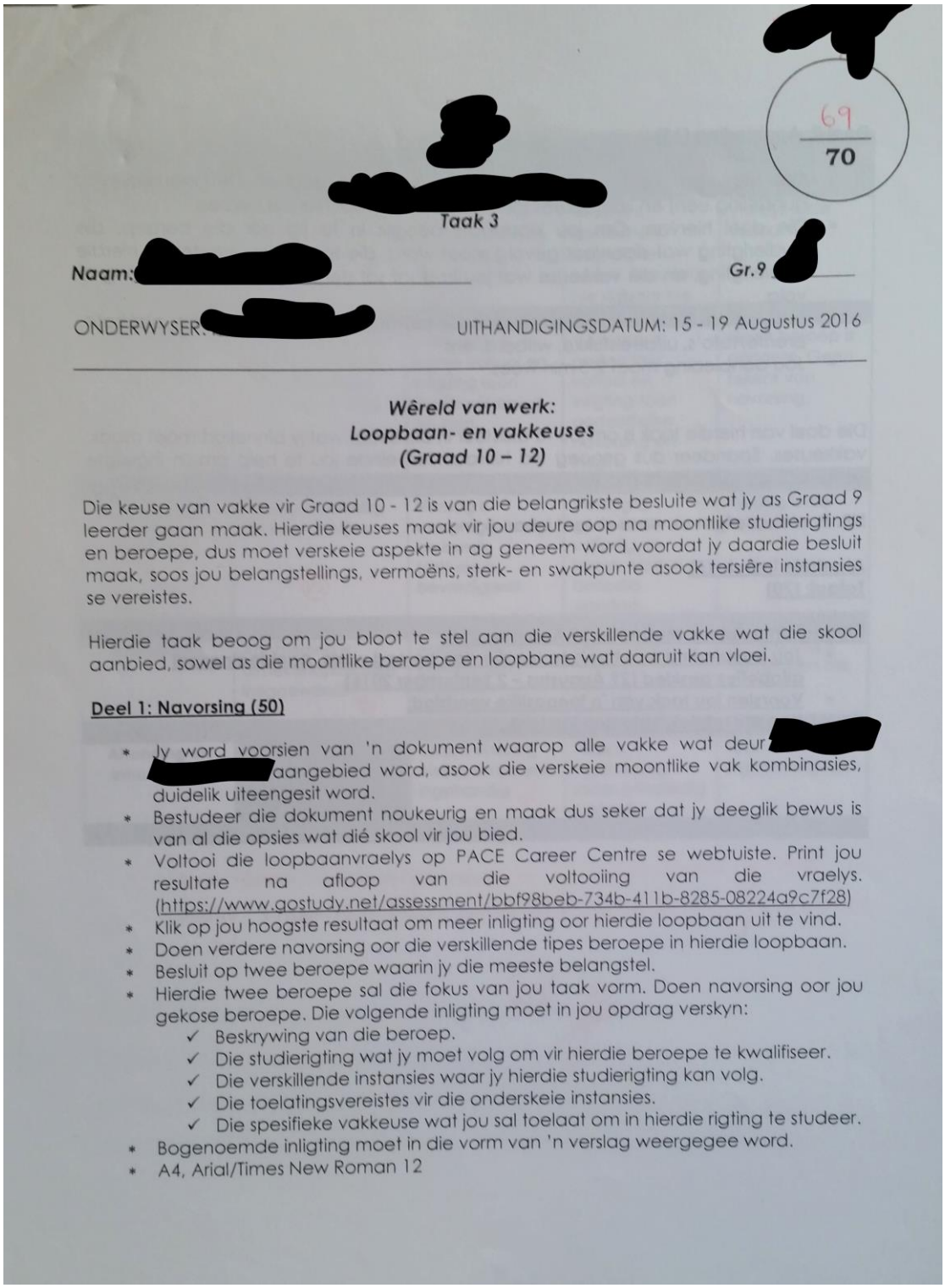
- My beroemde rolmodel is JOYCE MEYER. Sy is 'n motiveringspreker en geestelike raadgewer.
- Sy het haar eie televisieprogram op TBN en dit word wêreldwyd uitgesaai. Sy het ook meer as 100 boeke geskryf en uitgegee.
- Joyce Meyer was deur haar eie pa gemolesteer vanaf 'n jong ouderdom. Dit het gemaak dat sy die huis vroeg verlaat het en getrou het op die ouderdom van 18. Sy het gou daarna geskei omdat die man haar mishandel het. Toe sy tot bekering gekom het, het sy haar huidige man ontmoet. Toe haar pa oud

3

2

(10)

APPENDIX 18: Learner Assessment Task - Teacher 2



69
70

Taak 3

Naam: [redacted] Gr.9 [redacted]

ONDERWYSER: [redacted] UITHANDIGINGSDATUM: 15 - 19 Augustus 2016

Wêreld van werk:
Loopbaan- en vakkeuses
(Graad 10 – 12)

Die keuse van vakke vir Graad 10 - 12 is van die belangrikste besluite wat jy as Graad 9 leerder gaan maak. Hierdie keuses maak vir jou deure oop na moontlike studierigtings en beroepe, dus moet verskeie aspekte in ag geneem word voordat jy daardie besluit maak, soos jou belangstellings, vermoëns, sterk- en swakpunte asook tersiêre instansies se vereistes.

Hierdie taak beoog om jou bloot te stel aan die verskillende vakke wat die skool aanbied, sowel as die moontlike beroepe en loopbane wat daaruit kan vloei.

Deel 1: Navorsing (50)

* Jy word voorsien van 'n dokument waarop alle vakke wat deur [redacted] aangebied word, asook die verskeie moontlike vak kombinasies, duidelik uiteengesit word.
* Bestudeer die dokument noukeurig en maak dus seker dat jy deeglik bewus is van al die opsies wat dié skool vir jou bied.
* Voltooi die loopbaanvraelys op PACE Career Centre se webtuiste. Print jou resultate na afloop van die voltooiing van die vraelys. (https://www.gostudy.net/assessment/bbf98beb-734b-411b-8285-08224a9c7f28)
* Klik op jou hoogste resultaat om meer inligting oor hierdie loopbaan uit te vind.
* Doen verdere navorsing oor die verskillende tipes beroepe in hierdie loopbaan.
* Besluit op twee beroepe waarin jy die meeste belangstel.
* Hierdie twee beroepe sal die fokus van jou taak vorm. Doen navorsing oor jou gekose beroepe. Die volgende inligting moet in jou opdrag verskyn:
  - ✓ Beskrywing van die beroep.
  - ✓ Die studierigting wat jy moet volg om vir hierdie beroepe te kwalifiseer.
  - ✓ Die verskillende instansies waar jy hierdie studierigting kan volg.
  - ✓ Die toelatingsvereistes vir die onderskeie instansies.
  - ✓ Die spesifieke vakkeuse wat jou sal toelaat om in hierdie rigting te studeer.
* Bogenoemde inligting moet in die vorm van 'n verslag weergegee word.
* A4, Arial/Times New Roman 12

Deel 2: Aanbieding (15)

* Kies een van die beroepe waaroor jy navorsing gedoen het (verkieslik jou gunsteling een) en kom spreek jou klasmaats toe oor hierdie beroep.
* Die doel hiervan: Om jou klasmaats deeglik in te lig oor die beroep, die studierigting wat daarvoor gevolg moet word, die toelatingsvereistes vir hierdie studierigting, en die vakkeuse wat jou in staat sal stel om hierdie studierigting te volg.
* Maak gebruik van visuele hulpmiddels in jou aanbieding: Powerpoint, plakkate, prente/foto's, uitdeelstukke, witbord, ens.
* Jou aanbieding moet 2-5 min wees.

Die doel van hierdie taak is om jou te assisteer in die keuse wat jy binnekort moet maak; vakkeuses. Spandeer dus genoeg tyd hieraan ten einde jou te help om 'n ingeligte keuse oor jou toekoms te maak.

NB: Punte sal afgetrek word vir laat inhandiging.

Algehele indruk: (5)
Totaal: (70)

Inhandigingsdatum: Maandag 29 Augustus 2016

* **Jou aanbieding moet ook op hierdie dag gereed wees. Aanbiedings sal alfabeties geskied (29 Augustus – 2 September 2016)**
* **Voorsien jou taak van 'n toepaslike voorblad.**
* **Heg die rubriek agteraan jou taak.**

Deel 2: Aanbieding (15)

* Kies een van die beroepe waaroor jy navorsing gedoen het (verkieslik jou gunsteling een) en kom spreek jou klasmaats toe oor hierdie beroep.
* Die doel hiervan: Om jou klasmaats deeglik in te lig oor die beroep, die studierigting wat daarvoor gevolg moet word, die toelatingsvereistes vir hierdie studierigting, en die vakkeuse wat jou in staat sal stel om hierdie studierigting te volg.
* Maak gebruik van visuele hulpmiddels in jou aanbieding: Powerpoint, plakkate, prente/foto's, uitdeelstukke, witbord, ens.
* Jou aanbieding moet 2-5 min wees.

Die doel van hierdie taak is om jou te assisteer in die keuse wat jy binnekort moet maak; vakkeuses. Spandeer dus genoeg tyd hieraan ten einde jou te help om 'n ingeligte keuse oor jou toekoms te maak.

NB: Punte sal afgetrek word vir laat inhandiging.

Algehele indruk: (5)
Totaal: (70)

Inhandigingsdatum: Maandag 29 Augustus 2016

* **Jou aanbieding moet ook op hierdie dag gereed wees. Aanbiedings sal alfabeties geskied (29 Augustus – 2 September 2016)**
* **Voorsien jou taak van 'n toepaslike voorblad.**
* **Heg die rubriek agteraan jou taak.**